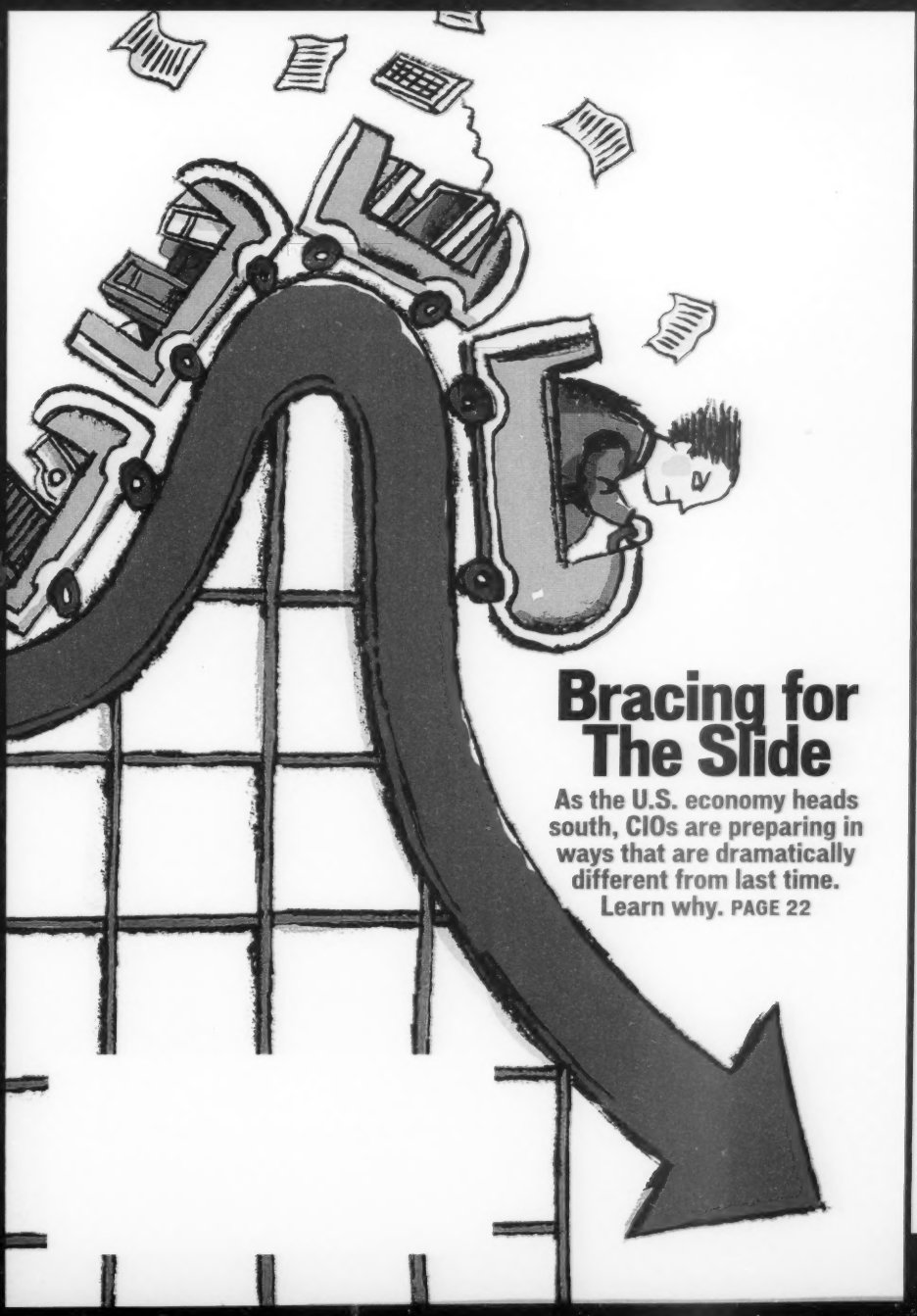
Back to Basics: Algorithms, named for Persian mathematician Al-Khwarizmi, aim for simplicity, speed and reliability. Sometimes they find elegance. PAGE 30

COMPUTERWORLD®



Bracing for The Slide

As the U.S. economy heads south, CIOs are preparing in ways that are dramatically different from last time. Learn why. PAGE 22

Inside

MARCH 24, 2008
VOL. 42, NO. 13 $5/COPY

News Analysis

The EPA has launched an effort to help IT managers cope with soaring data center energy costs. PAGE 12

IT vendors are trying to make the open-source process better for business users. But there's still more work to do. PAGE 14

THE GRILL: **NetApp founder Dave Hitz predicts flash storage is coming to a PC near you.** PAGE 19

Opinions

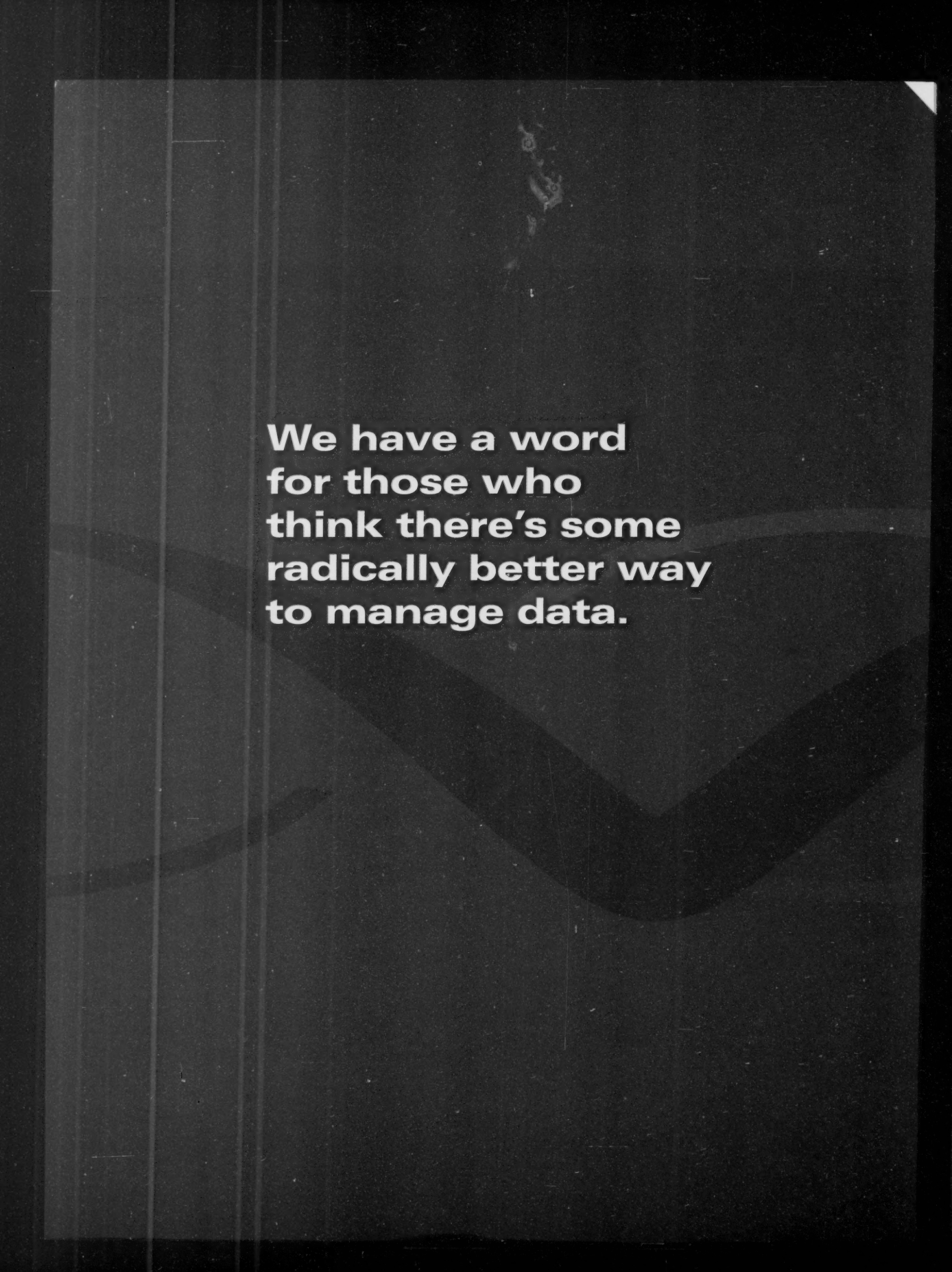
The 10 secrets of bad CIOs. PAGE 21

Careers

Why managing talent is like managing a supply chain. PAGE 34

Don't Miss . . .

'Interrogate' your applications to make integration easier. PAGE 18


We have a word
for those who
think there's some
radically better way
to manage data.

Welcome.

We know what you're thinking. You're thinking, "there must be a better way." A way that would produce data management solutions designed to work together from the start. A way that would address your current needs and anticipate those yet to come. A way that would be more accessible, adaptable, efficient, and affordable than the data management solution standbys. We know, because those were exactly the thoughts we had in mind when we started CommVault over a decade ago. Isn't it time you embraced a better way?

To learn more about the fastest growing data management company you'll wish you'd heard of sooner, and the many ways we can bring you a better way to manage data, visit **commvault.com.**

commvault®

solving forward™

DATA PROTECTION ► ARCHIVE ► REPLICATION ► RESOURCE MANAGEMENT ► SEARCH

©1999-2008 CommVault Systems, Inc. All rights reserved. CommVault, CommVault and logo, the "CV" logo, CommVault Systems, and Solving Forward are trademarks or registered trademarks of CommVault Systems, Inc. All other third party brands, products, service names, trademarks, or registered service marks are the property of and used to identify the products or services of their respective owners. All specifications are subject to change without notice.

Inside

COMPUTERWORLD ■ MARCH 24, 2008

■ NEWS DIGEST

6 Hannaford Bros. is the latest retailer to admit to a **data security breach**. | Certegy Check Services offers to settle a **class-action lawsuit** filed after an IT worker sold the data of **8.5 million people**.

8 A Washington state agency gives workers state-owned **flash drives** to try to prevent the loss of **confidential data**. | County clerks ask New Jersey's AG to **investigate discrepancies** in e-voting results.

10 Intel and **AMD** outline plans to deliver **six-core** and **four-core** processors, respectively.

■ NEWS ANALYSIS

12 EPA Moves to Help Put Data Centers on an Energy Diet. IT managers looking to reduce their data center energy use get offers of aid from the Environmental Protection Agency and vendors.

14 Open Source: Time to Get Down to Business. Open-source vendors have work to do to address the concerns of corporate users about issues such as the delivery of new features and the need for more predictable product road maps.

■ OPINION

4 Editor's Note: Don Tennant ponders the retraining dilemma: IT executives voice a preference for retraining, but the immediate need for new skills makes it impractical.

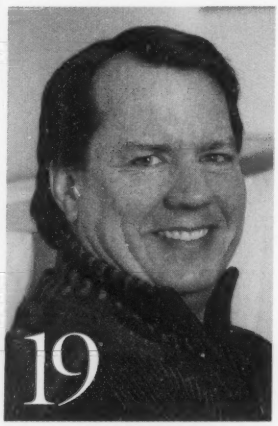
21 John D. Halamka has detected certain shared behaviors among fired CIOs. Here are 10 of them.

36 Paul M. Ingevaldson has a surefire test to determine whether you're delegating enough.

40 Frankly Speaking: Frank Hayes warns that the current recession will bring battles between IT and users. And this time, users have a stronger hand than they once did.

■ DEPARTMENTS

18 On the Mark: Mark Hall reports on software aimed at easing application integration.



19 The Grill: Dave Hitz, founder of NetApp, talks about running a grown-up company, working at the intersection of technical and cultural changes, and viewing life from the back of a horse.

37 Career Watch: Spouses outclout mentors; furthering your career in project management.

39 Shark Tank: An IT guru has some odd ideas about how to fix his slow-Internet problem.

■ ALSO IN THIS ISSUE

Letters	5
Company Index	39

■ FEATURES:

22 Bracing for the Slide

COVER STORY: As the economy heads south, CIOs are preparing in ways that are dramatically different from the way they dealt with the downturn that followed the dot-com crash.

30 Back to Basics: Algorithms

Everything you ever wanted to know about algorithms - and why you should care.

32 The Economics Of Energy

Tiny forecasting errors can cost utilities millions of dollars. Direct Energy, a Premier 100 Best in Class winner, has a forecasting system that minimizes the guesswork.

34 Just-in-Time Talent

Q&A: The Wharton School's Peter Cappelli says the best way to look at talent management is through a supply chain lens. Here's how.

COVER: ILLUSTRATION BY ROBERT NEUBECKER

Rams butt heads until their horns fall off.

They can't find a better way to beat the competition.
But you can. With proven business intelligence and analytic software from SAS.

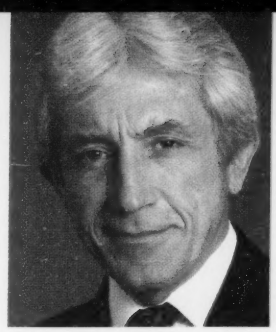
www.sas.com/rams

sas | THE POWER TO KNOW

■ EDITOR'S NOTE

Don Tennant

Retraining Dilemma



LAST MONTH, I wrote a column called "Entitled to Nothing," in which I addressed the disconnect between the two sides of the debate over whether an IT labor shortage exists in the U.S. I concluded that the shortage is not one of IT labor, but of *qualified* IT labor with the particular skills that companies need.

If there was a top recurring theme to the reader feedback I received, it was that employers generally are unwilling to invest in retraining employees in order to gain the new skills they require. Instead, many readers said, companies opt to replace their employees with people who already possess those skills.

"There is no [longer a] training and grooming process — at least, not for American tech workers," wrote one reader who conveyed a common frustration. "Any training that is still being provided to employees by employers is done for foreign workers, either overseas where the costs are exceedingly low, or after the employee has emigrated from his/her country of origin to a high-cost industrialized nation, where they are tied to their jobs by a visa."

"More and more, workers are expected to spend their own time and money to learn new technologies, with no responsibility on the part of the employer," another reader lamented, voicing a concern that others shared. "While this is not entirely bad in and of itself, it also means that the worker is left with little or no personal time away from the job."

As I noted in the "Entitled to Nothing" column, I was investigating the IT labor shortage question in preparation for a panel discussion on that topic at our Premier 100 IT Leaders Conference, which took place two weeks ago. During the discussion, I raised the training issue, and I used our electronic polling system to find out whether the audience felt that it is preferable to retrain existing employees or hire new staff to meet changing skills requirements. Eighty-five percent said it's preferable to retrain, and 15% said they'd opt to replace employees with people who have the needed skills.

■ The demand for new skills tends to be immediate, and management is disinclined to wait for, let alone fund, retraining.

The dilemma that arose, however, is that retraining is often unrealistic. One audience member said that while most IT leaders would prefer to retrain their employees, the reality is that the demand for new skills tends to be immediate, and upper management is disinclined to wait for — let alone fund — retraining.

It's a difficult management challenge, and it's one I broached during a conversation last week with Ron Hovsepian, the CEO of Novell. Hovsepian said that in the past year, he has had to replace 24% of his workers to gain the skills Novell needs.

"One thousand of our 4,000 employees are new to Novell," he said. "Candidly, among all the good revenue stories and the profit improving, people don't realize how much we've really gone in and changed our workforce to get the right skills here."

When I asked Hovsepian why he didn't retrain his employees instead, he said Novell "absolutely retrained the ones that we felt had the right aptitude and the right capabilities," and he stressed that his company continues to invest in training. But the reality is that companies often don't have the luxury of the time it takes to retrain.

"It's done with great thought and care while balancing [training] against the financial demands of what we've got to get done," Hovsepian said. "And the cycle time is the biggest issue. The brutality of the pressure the company has to operate under in 90 days is what drives us."

What's needed, in Hovsepian's view, is for training to come under the purview of an IT industry organization. He said he'd be happy to contribute to such an effort, because most companies don't have the time or the money to effectively address training themselves.

That's a fine idea, but it's doubtful it will happen anytime soon. In the meantime, too many companies will be forced to sacrifice valuable institutional knowledge for the immediate cost savings that economic reality demands. ■

Don Tennant *is editorial director of* Computerworld *and* InfoWorld. *Contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

Net Outage Toughest On Small Businesses

While big businesses might be affected by a wholesale Internet interruption, the largest impact would be on the 12 million small independent business users who do not have private infrastructures upon which to rely ["The Internet Is Down — Now What?" Jan. 21] or the technical savvy necessary to establish alternative communication methods should their hard-wired ISP links go down.

A disruption of the entire U.S. Internet infrastructure for more than a day could cost small businesses hundreds of billions of dollars.

The likelihood of a total, continentwide outage is slim. But a regional outage is more likely and would be noticeable financially.

■ **Mark Roy,** *CIO, Little Red Quilt House, Fairfield, Conn., Mark_Roy@LRQH.com*

Don't Downsize My Laptop, Please

My son takes a 12-in. laptop everywhere. My daughter got a 12-in. tablet for Christmas that she uses to take notes in college. I have a new 15.4-in. laptop that I use to check e-mail while sitting in my living room. None of these devices can be replaced with a smaller unit ["Opinion: Goodbye, Notebook; Hello 'Web Tablet,'" *Computerworld.com*, Jan. 25].

You need a full-size keyboard to type a real e-mail or edit a computer program. It's hard to watch a movie or work on a PowerPoint presentation on a 7-in. screen. Laptop screens are getting larger, not smaller. If 7-in. screens were the wave of the future, they would have taken off long ago.

■ **Thomas J. Sundy,** *production control manager, Union, N.J.*

COMPUTERWORLD.COM

FIND THESE STORIES AT COMPUTERWORLD.COM/MORE

Review: Four 24-in. LCDs That Widen Your View

Wide desktop displays aren't just for artists anymore – they can benefit everyone.

What the New XP and Vista Service Packs Mean to Win Server '08 Admins

Learn how the newest client and server operating systems play together, and find out why you should care.

How to Become A Green Road Warrior

Business travel burns a lot of energy, so here are 17 ways you can do your job efficiently while doing less damage to the earth.

Five Reasons Why the H-1B Visa Cap Will Increase

Patrick Thibodeau contends that it's not a matter of if, but when, the pro-visa forces will succeed. Find out what led him to that conclusion – and check out what nearly 200 online readers have to say about it.

A Storage Technology That Breaks Moore's Law

Nanochip technology applies to USB drives, solid-state disk drives and even enterprise servers, and it will be available in about two years.

Get Ready for These Six Game-Changing Technologies

Hype abounds in the IT world, but here are six breakthroughs that really could change your life. Among them: mobile broadband in laptops and wireless USB.

COMPUTERWORLD

P.O. Box 9171, 1 Speen Street
Framingham, MA 01701
(508) 879-0700
Computerworld.com

■ **EDITORIAL**

Editorial Director Don Tennant
Editor in Chief Scot Finnie
Executive Editors Mitch Betts, Julia King (events)
Managing Editors Michele Lee DeFilippo (production), Sharon Machlis (online), Ken Mingis (news)
Design Director Stephanie Faucher
Features Editors Kathleen Melymuka, Valerie Potter, Ellen Fanning (special reports), Barbara Krasnoff (reviews)
Senior Editor Johanna Ambrosio (channels)
Senior News Editor Craig Stedman
News Editors Mike Bucken, Marian Prokop
National Correspondents Gary Anthes, Thomas Hoffman, Julia King, Robert L. Mitchell
Reporters Brian Fonseca, Sharon Gaudin, Matt Hamblen, Heather Havenstein, Gregg Keizer, Eric Lai, Linda Rosencrance, Patrick Thibodeau, Jaikumar Vijayan, Todd R. Weiss
E-mail Newsletters Editor David Ramel
Channel Editors Johanna Ambrosio (servers and data centers), Angela Gunn (security), Lucas Mearian (storage), David Ramel (networking and Internet)
Assistant Managing Editor Bob Rawson (production)
Blogs and Projects Editor Joyce Carpenter
Editor at Large Mark Hall
Senior News Columnist Frank Hayes
Art Director April O'Connor
Associate Art Director Owen Edwards
Research Manager Mari Keefe
Senior Copy Editors Eugene Demaitre, Monica Sambataro
Copy Editor Donna Sussman
Associate Editor, Community Ken Gagné
Office Manager Linda Gorgone
Contributing Editors Jamie Eckle, Preston Gralla, David Haskin

■ **CONTACTS**

Phone numbers, e-mail addresses and reporters' beats are available online at *Computerworld.com* (see Contacts link at the bottom of the home page).
Letters to the Editor Send to letters@computerworld.com. Include an address and phone number for immediate verification. Letters will be edited for brevity and clarity.
24-hour news tip hot line (508) 620-7716
Subscriptions and back issues (888) 559-7327, cw@omeda.com
Reprints/permissions The YGS Group, (800) 290-5460, ext. 150, computerworld@theygsgroup.com

News Digest

FIND THE FULL STORIES AT
COMPUTERWORLD.COM

THE WEEK AHEAD

TUESDAY: *Computerworld*'s SaaScon 2008 conference, focusing on software as a service, starts in Santa Clara, Calif.

WEDNESDAY: Oracle is scheduled to report the financial results for its third quarter, which ended Feb. 29. Red Hat is also due to report its latest results this week, on Thursday.

WEDNESDAY: Cisco plans to issue the first set of security updates for its Internetworking Operating System software under a new twice-yearly patching schedule.

SECURITY

Data Breach at Hannaford Yields 4.2M Card Numbers

HANNAFORD BROS. CO. last week became the latest retailer to own up to a major data security breach. And the Maine-based supermarket chain quickly found itself facing at least two class-action lawsuits claiming that its IT security measures had been inadequate.

Hannaford disclosed last Monday that up to 4.2 million credit and debit card numbers, plus card expiration dates, had been stolen from its systems between Dec. 7 and March 10. The company also said that about 1,800 cases of fraud had been reported as a result of the breach.

Ronald Hodge, Hannaford's president and CEO, said in a letter to customers posted on the grocer's Web site that the card numbers were stolen while data was being transmitted to authorize sales transactions. No names, addresses or other identifiers were taken, he said, adding that the company "doesn't collect, know or keep any personally identifiable customer information."

In a separate "Customer Questions" document, Hannaford said that it was "first made aware of suspicious credit card activity" on Feb. 27, and that it "immediately" began an investigation with help from outside IT security consultants.

Hannaford defended its security measures, saying they meet and in many cases "go above and beyond" industry standards. But the grocer added that it is "committed to taking whatever steps may be necessary" to beef up its defenses.

■ Hannaford said that the intrusion into its systems affected all of its 165 supermarkets in New England and New York, plus 106 Sweetbay stores in Florida and 23 independently owned markets that sell Hannaford products.

Perhaps indicating that some actions already were being taken, most of the links on Hannaford's Web site were disabled last week. As late as Friday, almost all of the pages on the site were blank except for a note that read, "Hannaford.com is currently undergoing site maintenance. Stay tuned."

Another item on Hannaford's to-do list may be encrypting data as it is being transmitted for authorization of credit and debit transactions. That is required under the Payment Card Industry Data Security Standard, better known as PCI.

But many merchants still don't encrypt such data, said Avivah Litan, an analyst at Gartner Inc. And she noted that as companies get better at protecting stored information, "thieves are going after data in transit."

By Wednesday, two class-action lawsuits had been filed against Hannaford in federal court in Maine.

Michael Fantini, a lawyer at a Philadelphia law firm that filed one, claimed that the grocer had failed to live up to the implicit understanding that a business will safeguard the financial data of its customers.

— Jaikumar Vijayan

SECURITY

Firm Seeks To Settle Data Suit

In an attempt to avoid a long legal battle, Certegy Check Services Inc. has offered to settle a class-action lawsuit filed on behalf of 8.5 million people whose personal data was stolen by an IT worker at the check-processing firm.

Certegy said last summer that a database administrator had copied and then sold data stored in its systems.

THE FINE PRINT

- Certegy would pay identity theft reimbursements on a first-come, first-served basis.
- The maximum payment to an individual would be $20,000, minus insurance coverage.
- People would have to file claims within 90 days of discovering a case of identity theft.

The settlement would provide free monitoring of credit records and bank accounts, plus identity theft insurance coverage. Identity theft victims also could be reimbursed for some expenses.

But there are caveats, including a $4 million cap on the amount of money Certegy will pay for identity theft claims. "If they're responsible, they should reimburse – period," said Gartner Inc. analyst Avivah Litan.

– JAIKUMAR VIJAYAN

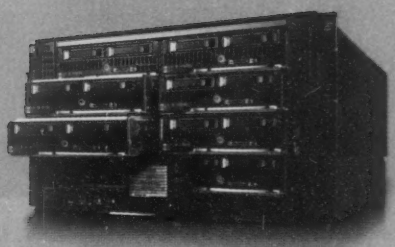
intel
Xeon inside
Powerful.
Efficient.

Alternative Thinking About The Size of Blade Systems:

CAREFUL, DON'T TRIP OVER THE INFRASTRUCTURE.

Strength and power, now in a smaller, more convenient size. Introducing the HP BladeSystem c3000. All the technology of our larger BladeSystem in an efficient, compact, affordable package. Careful, watch your step.

Technology for better business outcomes.



Powered by the Quad-Core Intel® Xeon® Processor[1]

Get down to the smallest details. Visit hp.com/go/nocompromise57
1-866-625-0808

1. Intel, the Intel logo, Xeon, and Xeon Inside are trademarks or registered trademarks of Intel Corporation in the U.S. and other countries.
The information contained herein is subject to change without notice. © 2008 Hewlett-Packard Development Company, L.P.

STORAGE

Washington State Agency Takes Steps to Plug Flash Drive Security Gap

WORKERS IN the state of Washington's Division of Child Support are getting state-owned USB flash drives as part of a move to eliminate the use of unsanctioned thumb drives.

External flash drives used by field workers hold the names, dates of birth and Social Security numbers of children served by the agency. They may also hold client tax documents, employer records, criminal histories and passport data.

The state began rolling out 200 SanDisk Corp. Cruzer drives late last year after recalling suspect devices used by workers in the agency's 10 field offices. Most of those had been purchased independently by employees, causing myriad problems for the agency, said Brian Main, the division's data security officer.

"We do periodic risk analysis of our systems, and one of the things that came up is the use of thumb drives — they were everywhere," said Main. "We had a hard time telling which were privately owned and which were owned by the state."

> **"We do periodic risk analysis of our systems, and one of the things that came up is the use of thumb drives – they were everywhere.**
>
> **BRIAN MAIN,** DATA SECURITY OFFICER, WASHINGTON STATE DIVISION OF CHILD SUPPORT

The Cruzer Enterprise drives provide 256-bit AES encryption and are password-protected, Main noted.

The agency also plans to use SanDisk's Central Management and Control software in its Olympia headquarters. The Web-based management software can centrally monitor and configure the miniature storage devices and prevent unauthorized access to them.

Larry Ponemon, chairman of Ponemon Institute LLC, a Traverse City, Mich.-based research firm, said that most organizations are too enamored of the convenience, portability and low cost of USB flash drives to consider security issues.

"I think a lot of organizations are asleep at the switch. They don't see this as a huge problem. It obviously has the potential to be the mother of all data-protection issues," Ponemon said.

Main said the agency first looked at Verbatim America LLC's thumb drives but ultimately chose the SanDisk technology because of its support for Microsoft Corp.'s Windows Vista operating system.

Workers in the agency's training operations are getting 4GB devices to store large presentations and screenshots, while enforcement personnel will get 1GB drives, Main said.

— Brian Fonseca

Short Takes

The U.S. Department of State disclosed that the passport records of presidential candidates Hillary Clinton, John McCain and Barack Obama were all improperly viewed by three contract workers who had access to its systems. The breaches were flagged by the agency's security monitoring technology. Two of the workers were fired, and the third was disciplined. But State Department officials didn't learn of the breaches until last week.

Microsoft Corp. said it has bought Komoku Inc., which makes rootkit detection tools. Microsoft plans to use the tools to improve the security of its Forefront and Windows Live OneCare products.

BMC Software Inc. said it has agreed to acquire BladeLogic Inc., a maker of data center automation software, for approximately $800 million in cash.

Red Hat Inc. has released the source code for its Red Hat Certificate System to the open-source community. The security framework manages user identities and transactions on a network.

SECURITY

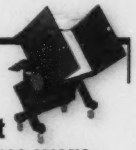
N.J. County Clerks Call for Probe of Primary E-Voting

A New Jersey association of county clerks last week called on state Attorney General Anne Milgram to investigate possible discrepancies in e-voting machines used in last month's presidential primary election.

Clerks from a half-dozen counties reported discrepancies in the tallies generated by about 60 Sequoia Voting Systems Inc. devices during the Feb. 5 election, according to the Constitutional Officers Association of New Jersey.

Most cases involved one- or two-vote differences between a machine's paper trail and its memory cartridges, it said.

"We want to know what the problems were and how to fix them," said Michael Dressler, president of the association.



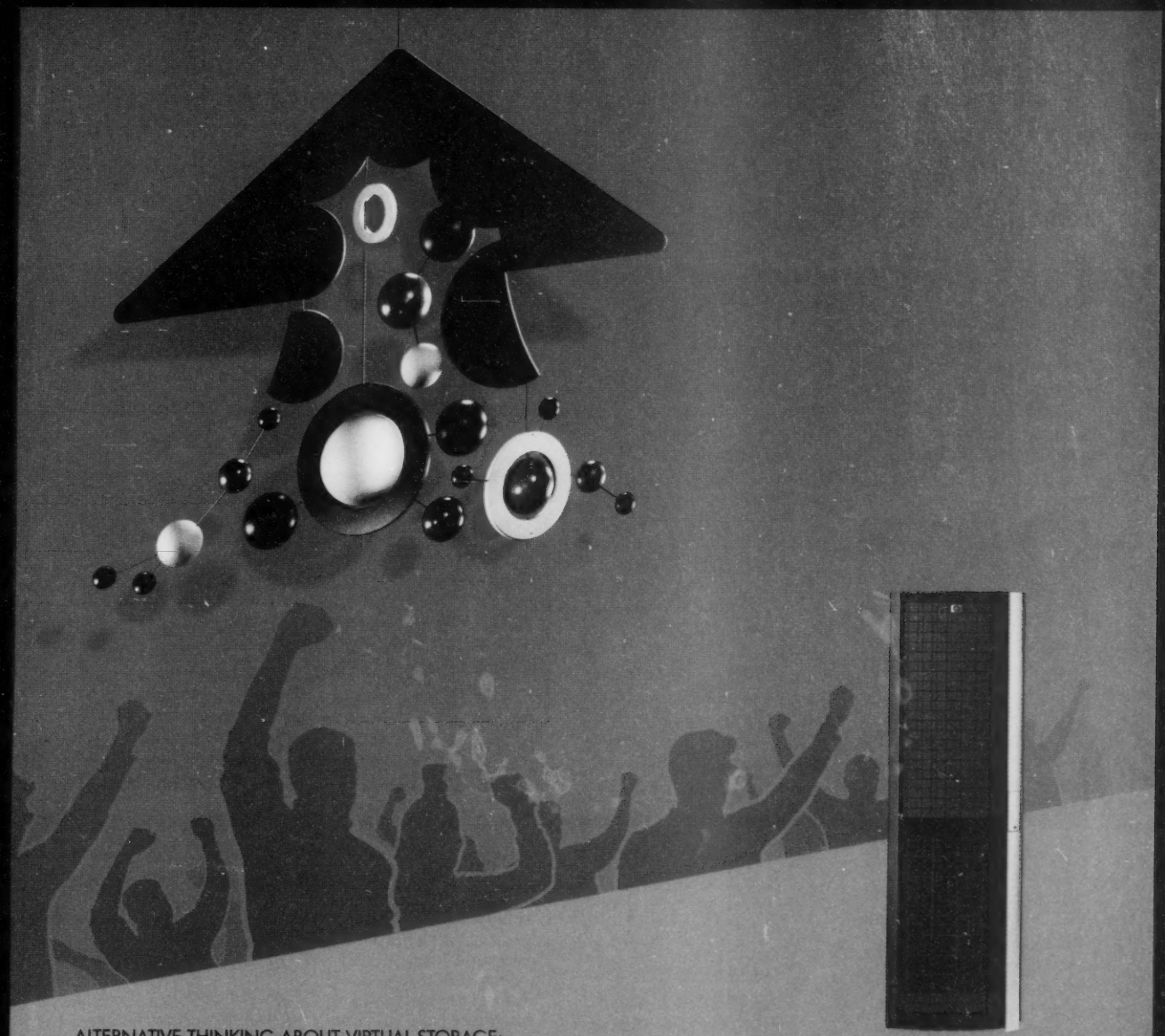
> **"We want to know what the problems were and how to fix them.**
>
> **MICHAEL DRESSLER,** PRESIDENT, CONSTITUTIONAL OFFICERS ASSOCIATION OF NEW JERSEY

Sequoia blamed the problem on poll-worker error and said it could be fixed with a software update. But the county clerks want a third-party investigation.

Michelle M. Shafer, Sequoia's vice president of communications, said that the firm hired Kwaiden Consulting to review the e-voting machines as part of a federal certification process. "We'd like it to be an objective third-party review," she said.

A spokesman for Milgram wasn't sure further investigation was needed. "We think we know what happened," he said.

ROBERT McMILLAN, IDG NEWS SERVICE



ALTERNATIVE THINKING ABOUT VIRTUAL STORAGE:

VIRTUALIZE STORAGE NOW.

A powerful business innovation in data storage is now within your reach. The new HP StorageWorks 4400 Enterprise Virtual Array is here. It virtualizes up to 96TB of storage—across numerous storage servers and platforms—simplifying storage management and speeding access. Less limitations. More freedom. Technology for better business outcomes.

HP STORAGEWORKS EVA4400

Up to 96TB virtual storage capacity.

- Enterprise-class performance
- Over 30% better capacity utilization*
- Up to 75% less time needed to configure and manage*
- Easy application integration

Now's the time for virtual storage.
Visit hp.com/go/virtualstorage6

©2008 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. *Source: Edison Group.

PROCESSORS

Chip Makers Intel, AMD Disclose Delivery Plans

INTEL CORP. last week announced that its six-core processor will likely ship to resellers in the second half of this year.

A day later, an executive from rival Advanced Micro Devices Inc. said the first systems running its new quad-core Barcelona chip are expected to hit the market in April.

DELIVERY PLANS

CHIP	DELIVERY
INTEL	
Dunnington	2nd Half 2008
Nehalem	Q4 2008
Tukwila	Q4 2008
AMD	
Barcelona	Q2 2008
Shanghai	2nd Half 2008

The Intel processor, built using the company's new 45-nanometer technology, will include 1.9 billion transistors and 16MB of Level 3 cache, according to Pat Gelsinger, senior vice president and general manager of Intel's digital enterprise group.

He said that the company plans to demonstrate the chip, code-named Dunnington, at the Intel Developer Forum next month in Shanghai.

Meanwhile, Kevin Knox, vice president of AMD's commercial business, said he expects that shipments of Barcelona-based systems will give the company a boost in its competition with Intel.

Top computer makers, including Hewlett-Packard Co., IBM, Sun Microsystems Inc. and Dell Inc., all plan to launch Barcelona-based servers during the second quarter of this year, he said.

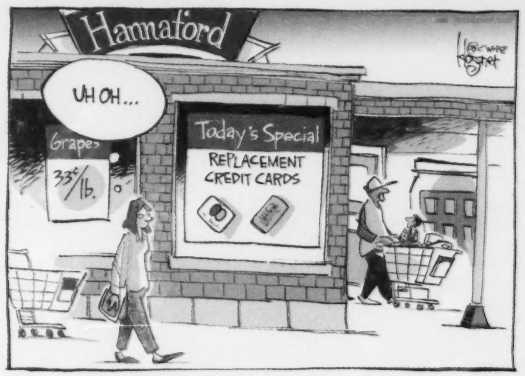
Dan Olds, an analyst at Gabriel Consulting Group Inc., called Intel's move to six-core technology a major step in the semiconductor industry — and one that keeps the chip maker's technology well ahead of AMD's.

Nonetheless, Knox contended that while "six cores is interesting," he is "not convinced there's a gigantic market of applications that want to exploit that number."

Intel last week also disclosed that it plans to start producing 32nm chips, code-named Westmere, in 2009 or 2010.

— Sharon Gaudin

BETWEEN THE LINES *By John Klossner*



BENCHMARKS LAST WEEK

The U.S. Supreme Court denied a request by Microsoft Corp. to halt an antitrust lawsuit related to desktop applications that was filed by Novell Inc. in 2004.

Bain Capital LLC and China-based Huawei Technologies Co. dropped their bid to buy 3Com Corp., saying they couldn't agree on changes designed to address the national security concerns of federal officials.

ONE YEAR AGO: Oracle Corp. sued rival SAP AG, claiming that it had illegally downloaded software and technical support materials from Oracle's Web site.

Global Dispatches

Tata Opens Dev Center in Ohio

MUMBAI, INDIA – Tata Consultancy Services Ltd. last week announced that it has opened a services delivery center in Milford, Ohio.

Tata, which is based here, said that the new facility will be its primary software development center for North American customers. It will eventually employ 1,000 people.

Siddharth Pai, a partner at outsourcing consultant Technology Partners International in Houston, said that as Indian outsourcers grow, they will need the ability to offer services from locations worldwide.

John Ribeiro,
IDG News Service

African Cable Work Finally Begins

NAIROBI, KENYA – Construction of the East Africa Submarine Cable System got under way in mid-March after a two-year wait marked by squabbling among project members and funding delays.

The $280 million (U.S.) cable will run under the Indian Ocean from Durban, South Africa, to Port Sudan in Sudan and then to Europe.

The cable will provide Internet connectivity to several African countries along the coast and to several inland countries, according to the Nairobi-based office of the project's secretariat, Simon Olawo.

The project is slated to be completed in the last quarter of 2009, Olawo said.

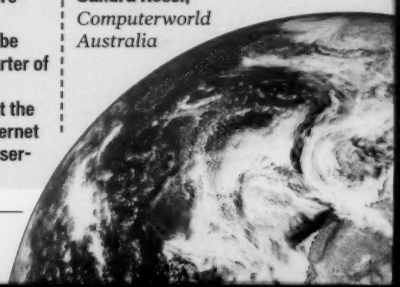
The backers expect that the cable will bring faster Internet and telecommunications services to the region, one of the last parts of the world that still relies on higher-cost satellite telecommunications systems.

Michael Malakata,
IDG News Service

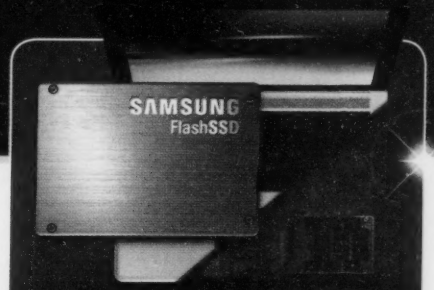
BRIEFLY NOTED

The Australian National Security office last week said that it has awarded about $5.9 million ($5.3 million U.S.) in funding for scientific and technical research supporting counterterrorism efforts. The grants were awarded to Macquarie University, the University of South Australia and Queensland University of Technology, the agency said.

Sandra Rossi,
Computerworld Australia



how solid is your drive?



Samsung Solid State Drive
all-Flash drives available
in notebooks and consumer electronics

weight (2.5" SATA-II SSD)	73g
endurance (MTBF*)	> 2 million hours
shock resistance	1500G / 0.5ms
read speed	100MB / s
write speed	80MB / s
active power consumption	1W
operating temperature	-25C - 85C

*Mean Time Between Failures

© 2008 Samsung. All rights reserved.

solid state reliability

Introducing the new Samsung Flash Solid State Drive (SSD). No moving parts, except some hardworking electrons. A Mean Time Between Failures (MTBF) almost three times longer than a hard drive. Exceptional shock resistance. And power use that extends battery life up to 20%. With a Samsung SSD inside your notebook, your data is always there when you need it.

www.samsungssd.com

SAMSUNG

EPA Moves to Help Put Data Centers on an Energy Diet

As energy use — and costs — spiral, IT execs turn to the feds and vendors for aid.

By Patrick Thibodeau

AT ONE TIME, small x86-based servers were the darlings of the data center — inexpensive, easily replaced and easily added. Today, these systems have become akin to a cancer, consuming ever-increasing amounts of IT floor space and power.

Data center energy consumption may not be out of control, but it has become enough of a concern for the U.S. Environmental Protection Agency to step in and try to help.

The agency last week announced that it is developing a benchmark to help IT managers compare energy consumption in their facilities with that of other data centers.

The EPA says potential financial savings from improving data center efficiency are significant — even a 10% cut in expected energy consumption in U.S. data centers over the next few years would save enough energy to power up to 1 million homes per year. Such a cut would also help reduce greenhouse gases and cut industry IT costs by about $740 million annually, it said.

The EPA project comes as midsize and large companies are expected to significantly increase data center capacity over the next few years — intensifying the need to consolidate machines and better use space.

Several independent studies have found that anywhere from one-third to more than two-thirds of midsize to large businesses will build data centers or expand existing ones in the next few years. For example, a 2005 study by Afcom, an association of data center professionals, found that more than 60% of its 3,000 members planned to expand their data centers within 10 years.

This construction boom is expected to double power use by U.S. data centers over the next five years, the EPA said last year.

About 100 companies have already said they will provide raw power data and other information to the EPA for use in developing its new benchmark, which should be available in about two years the agency said.

Miles Kelly, vice president of marketing and strategy at 365 Main Inc., a San Francisco-based data center operator, said his company has agreed to supply the EPA with operating information from its six data centers.

The company, whose facilities are used by hundreds of large organizations, including hosting and telecommunications companies, hopes to get a better grasp of its facilities' energy consumption, Kelly said.

By comparing the efficiency of the 365 Main data centers with similar facilities, "we can make better and clearer decisions," he added.

Mike Zatz, who manages the EPA Energy Star program that promotes the use of energy-efficient products to businesses, said the agency must essentially start the effort from scratch because there are no widely accepted means for comparing data centers. "What the industry really wants to get to is a measure of energy use per output from the data center — what we would call 'useful work,' " said Zatz. However, he added that "the industry hasn't agreed on what 'useful work' means."

Zatz said that he expects the project to use data compiled from consulting firm Uptime Institute Inc., which ranks data centers on performance and uptime criteria.

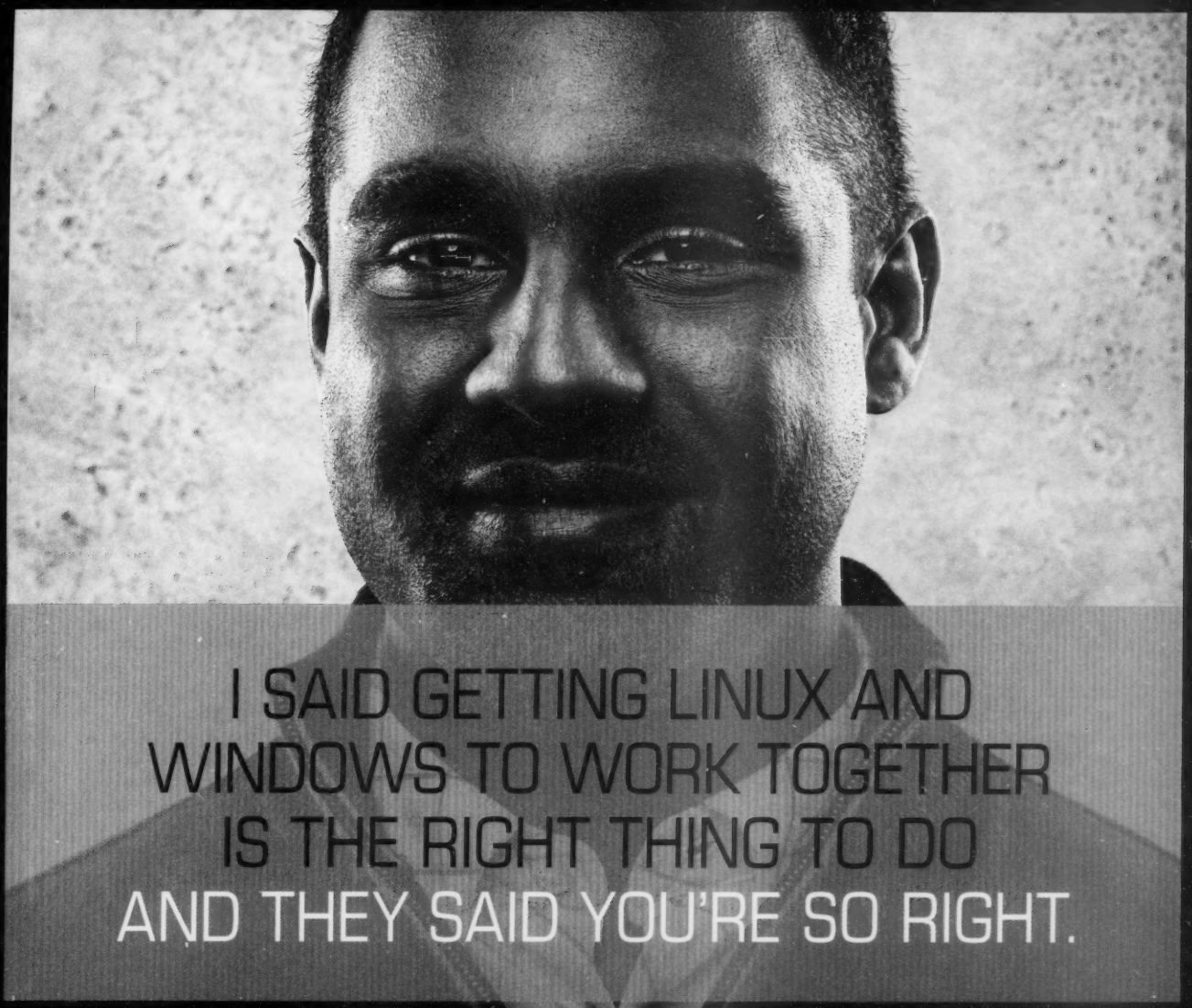
Ken Brill, founder and executive director of Uptime, said the EPA's effort is creating momentum and increased awareness of the need for data center benchmarks — a development that he called "terrific." But he also said he fears that EPA benchmarking data may not be detailed enough for many companies because there is "tremendous variability" in how data centers collect information.

Meanwhile, vendors are developing new products and services to help data center operators cut energy use.

For example, Hewlett-Packard Co. last week disclosed plans to produce an eight-socket x86 server with quad-core Barcelona chips from Advanced Micro Devices Inc. that can be used as a consolidation platform to combat server sprawl. And last month, IBM emphasized that its new z10 mainframe can be used to consolidate hundreds of x86 servers.

HP also hopes that its February acquisition of EYP Mission Critical Facilities Inc. will put it in a position to help IT managers design more-efficient data centers. EYP is a designer of technology-intensive facilities. ■

ISTOCK



INTEROP ABILITY

DOWNLOAD THE COLLABORATION ROADMAP

It's the ability to have Microsoft® Windows Server® and SUSE® Linux Enterprise Server from Novell® work together. And the ability to integrate both more easily than you imagined. It's Microsoft and Novell working together to help you reduce cost and complexity with new solutions for virtualization, directory integration, systems management, and office document translators—each with clearly defined intellectual property rights. So you can increase performance, savings and simplicity and build your data center without compromise.

Download the collaboration roadmap at **www.moreinterop.com**

Novell® Microsoft®

Copyright © 2008 Novell, Inc. and Microsoft Corporation. All Rights Reserved. Novell, the Novell logo and SUSE are registered trademarks of Novell, Inc. in the United States and other countries. Linux is a registered trademark of Linus Torvalds. Microsoft and Windows Server are trademarks of the Microsoft group of companies.

Open Source: It's Time to Get Down to Business

IT vendors are trying to make the open-source process better for business users. There's still work to do. By Todd R. Weiss

DON MACASKILL calls himself a "huge fan" of open-source software in general, and the MySQL database in particular. MySQL is one of the core technologies used at SmugMug Inc., an online photo-sharing service, where MacAskill is CEO.

But now MacAskill finds himself hoping that MySQL can be rescued and righted by Sun Microsystems Inc. — a traditional IT vendor, albeit one that has fully embraced the open-source process in recent years.

Sun's acquisition of MySQL AB last month is the biggest in a series of steps that vendors have taken to try to improve the open-source experience for corporate users. That's becoming a pressing need as more companies adopt open-source software — and as vendors push hard to increase the adoption rate even further.

But there's still a long way to go to soothe user concerns over issues such as the timely delivery of new features and bug fixes, the need for more predictable product road maps, and the lack of IT workers with open-source skills and experience.

GETTY IMAGES

At SmugMug, for example, MacAskill is still waiting for fixes to a scalability problem that led him to write in a January blog post that he was "seriously considering" not renewing the company's MySQL Enterprise support contract when it expires later this year.

As SmugMug adds more processor cores to its MySQL servers, performance isn't increasing like it should, MacAskill said. The problem stems from concurrency problems between MySQL and InnoDB, the most widely used storage engine for the database.

MacAskill said he and other users tried for years to get MySQL to address the glitches, "and all we got back was radio silence." Eventually, users such as Google Inc. developed their own patches in an effort to fix the performance problem, but MySQL has been slow to incorporate the patches into the database.

Zack Urlocker, MySQL's executive vice president of products, said in a response to MacAskill's January blog post that MySQL had added some fixes to new database releases and was reviewing Google's patches. MySQL was also looking forward to tapping into Sun's "great expertise in scaling performance," Urlocker wrote.

MacAskill said he hopes that Sun, which he viewed as an IT dinosaur a few years ago, can solve the scalability problem. And despite the nature of open source, he would prefer that the fix come as part of the vendor's support of the database. "We have our own product to build here," he noted.

The uncertainties of the open-source development model continue to drive some corporate users away. For example, Dale Frantz, CIO at Auto Warehousing Co., considered desktop Linux before deciding last year to replace the new-car processing company's PCs with Macintosh systems.

The problem, Frantz said at *Computerworld*'s Premier 100 IT Leaders Conference this month, was that when he talked to people in the open-source community,

Continued on page 16

The AT&T LaptopConnect Card works in more places worldwide than any other U.S. carrier.

FREE

Option GT Ultra Card
after mail-in rebate.

Pay $99.99 for card, and after mail-in rebate receive $100 AT&T Promotion Card. $60 monthly data package purchase and 2-year wireless service agreement required.

at&t
Your world. Delivered.

Go to att.com/laptopconnect or visit your nearest AT&T store.

Coverage not available in all areas. **Limited-time offer.** Some restrictions apply. See store for details. See contract and rate plan brochure for details. Allow 60 days for debit card fulfillment. Card may be used only in the U.S. and is valid for 120 days after issuance date but is not redeemable for cash and cannot be used for cash withdrawal at ATMs or automated gasoline pumps. Subscriber must live and have a mailing address within AT&T's owned wireless network coverage area. Up to $36 activation fee applies. Equipment price and availability may vary by market and may not be available from independent retailers. **Early Termination Fee:** None if cancelled in the first 30 days; thereafter $175. Some agents impose additional fees. **Sales tax** calculated based on price of unactivated equipment. Service provided by AT&T Mobility. ©2008 AT&T Intellectual Property. All rights reserved. AT&T, AT&T logo, and all other marks contained herein are trademarks of AT&T Intellectual Property and/or AT&T affiliated companies.

Continued from page 14

they mostly "wanted to know what we could do for them." In the end, he added, "we had to do what was best for Auto Warehousing Co."

Another big issue is the split development model that many open-source vendors have adopted for the enterprise and community versions of their products.

Jeremy Cole, a former MySQL user at Yahoo Inc. who is now a consultant at Proven Scaling LLC, said that MySQL has been updating its enterprise database release more often than the community version. As a result, he said, "while enterprise users are getting fixes faster, they're essentially running untested code."

In addition, Cole said, users such as Google and Yahoo have long had to either live with a variety of shortcomings in MySQL's software or do the development work themselves.

Cole wrote in a blog post in January that he thinks Sun "has a very good chance of leading MySQL better than MySQL" did. As of last week, though, he had yet to hear of any planned changes to MySQL's development model or release schedule.

Bill Parducci, chief technology officer at Think Passenger Inc., which builds online communities for companies and their customers, noted that Linux vendor Red Hat Inc. doubled the length of its new-release cycles several years ago because of pressure from users who were having trouble keeping up with its updates.

> **"I think it's a new phase of MySQL's life. It's fascinating watching this, really.**
>
> **DON MacASKILL,** CEO, SMUGMUG INC.

In addition to Red Hat Enterprise Linux, Think Passenger uses open-source technologies such as the CentOS version of Linux, the Jetty Web server and Iona Technologies PLC's Fuse Message Broker.

Parducci is satisfied with most of his open-source vendors but sees room for improvement, particularly among the smaller ones. They need to cultivate their communities and ensure that they have timely feedback loops so that business users can get the technical help they require, he said.

More comprehensive and reliable product road maps would help as well, according to Gautam Guliani, executive director of software architecture at Kaplan Test Prep & Admissions.

The division of Kaplan Inc. uses a small assortment of open-source software, including Red Hat Linux and Red Hat's JBoss middleware. Getting timely support from the open-source vendors hasn't been a problem for Guliani. But in some cases, he said, "the development road map isn't thought out as much as we'd like."

Jonathan Schwartz, Sun's CEO and president, said after the announcement of the MySQL acquisition in January that the open-source vendor's inability "to give peace of mind to a global company that wants to put MySQL into mission-critical deployment" had been a big impediment to its growth. To try to rectify that, Sun plans to offer new MySQL support services worldwide.

Red Hat is also pushing to make it easier for corporate users to deploy its JBoss middleware. Last month, the company said it was setting up new performance-tuning, application certification and technology migration centers for prospective JBoss users. And on March 13, Red Hat said it had bought open-source systems integrator Amentra Inc. specifically to work with JBoss users.

Also, Novell Inc. and SAP AG last week said they're working to optimize Novell's SUSE Linux Enterprise operating system for users of SAP's ERP applications.

Baldor Electric Co. in Fort Smith, Ark., has been running its SAP applications on an IBM mainframe with SUSE Linux for the past three years. Mark Shackelford, Baldor's vice president of information services, was skeptical at first about moving the SAP applications to Linux. "But it's more stable than any proprietary Unix that we had," he said.

SmugMug's MacAskill is counting on Sun to bring some stability and better scalability to MySQL, even though he hasn't seen any changes yet. "I think it's a new phase of MySQL's life," he said. "It's fascinating watching this, really." ■

Craig Stedman contributed to this story.

Novell Users Vexed by Skills, Training Shortages

Novell's shift toward Linux and other open-source technologies has fit well with the IT direction at Chicago-based Metropolitan Bank Group Inc., which began using open-source software in 2002.

But Metropolitan CIO Thomas Johnson is still having trouble finding enough training classes for his IT staff on Novell's open-source products and its venerable NetWare technology. And trying to hire skilled workers often is a bust.

"It's hard to find Linux and Novell experts," Johnson said at Novell's BrainShare 2008 user conference in Salt Lake City last week. "Everybody's 'Microsoft everything.' It's very weak on the Linux side."

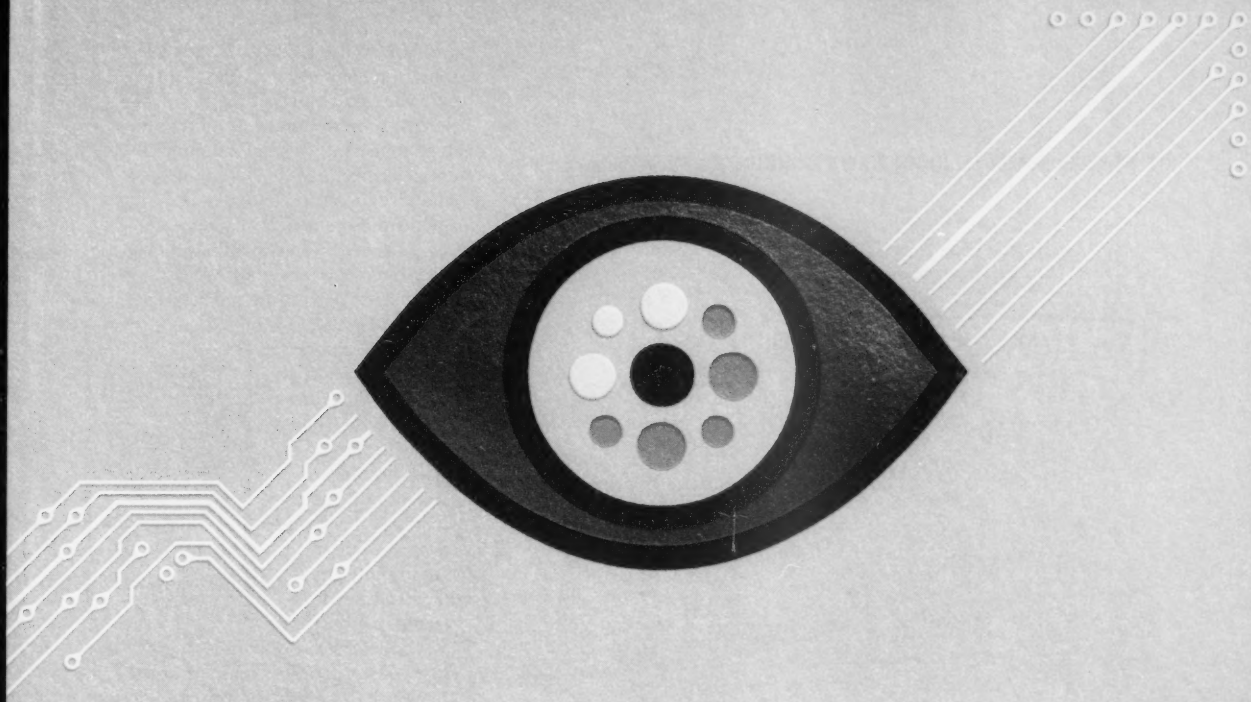
That was a common lament at BrainShare. For example, Bruce Rathbun, a systems engineer at Perot Systems Corp. who works under contract for Harvard Pilgrim Health Care Inc. in Boston, said he's getting IT help through two Novell-trained workers in India because he couldn't find qualified people locally.

And now that Harvard Pilgrim is adopting Novell's SUSE Linux software, the labor problem has been further amplified. "We need to find old-school Novell people who know Linux as well," Rathbun said.

Training workers is also a problem because of a lack of Novell classes in the Boston area, he said.

Novell knows that it needs to increase training. "I wake up every morning thinking about this," said Michele Allen, the company's director of training partners and certifications. One planned step, she added, is expanding online training to include nuts-and-bolts-level skills.

– TODD R. WEISS



ALTERNATIVE THINKING ABOUT SERVICE MANAGEMENT:

Business Driven. Not Just Business Aligned.

Alternative thinking is repositioning IT from the server closet to the front lines, embracing its impact on the business (not just in a PowerPoint® deck, but actually doing it).

It's rewiring the rules of engagement to identify problems, prioritize solutions and automate change (before things become business critical).

It's partnering with HP, a pioneering force behind ITIL, to leverage the experience of certified consultants and utilize the ingenuity engrained in the DNA of our software.

It's placing business metrics under the microscope every day, every minute, every nanosecond—enhancing insight and extending control (from a financial perspective, for a change).

Technology for better business outcomes. hp.com/go/servicemanagement

©2008 Hewlett-Packard Development Company, L.P. PowerPoint is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

On the Mark

HOT TRENDS ■ NEW PRODUCT NEWS ■ INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Taming App Integration

THE NAME of the new version of Alpharetta, Ga.-based OpenSpan Inc.'s application-integration software is a mouthful: OpenSpan Platform SOA Desktop Edition. (Thank goodness the marketing people abbreviated "service-oriented architecture.") The software, which will ship later this month, lets developers create and expose services for integrated applications that they build on their desktops. CEO Francis Carden says the Windows-based software does its integration by getting inside applications and "virtualizing presentation objects." That is, using the software's "interrogator" feature, a developer can drag and drop objects from multiple applications written for Windows, Java, mainframes, PowerBuilder and a host of other systems onto a common palette. The interrogator understands the functions underlying the objects, such as buttons or sliders, and stores them in a repository. The developer can then link them together to create a totally new composite app or service. Or, even easier, he can integrate an object's functions into the user interface of another program. Carden claims that the intuitive developer UI and the nifty interrogator tool help IT deploy integration projects faster than any other approach. Pricing is based on the number of seats.

Comprehensive app integration is possible from the desktop, Carden claims.

Rich Internet Apps Could Get Richer

No language is perfect for all application needs. But in app dev, certain environments seem to dominate for certain types of projects. And when it comes to rich Internet applications (RIA), it's hard to look beyond the AJAX hype. Yes, AJAX popularized the move to RIA, but it has substantial limits. For one thing, you need to learn when and where to write your business logic in JavaScript and how to use HTML for your presentation layer. And if you want to give your users any offline capabilities, you'd better make certain they need to use only a small amount of data, because AJAX can handle only a handful of stored bytes.

Curl, a 10-year-old language developed at MIT specifically for RIA, takes developers beyond AJAX's boundaries. According to Richard Monson-Haefel, vice president of developer relations at Cambridge, Mass.-based Curl Inc., a wholly owned subsidiary of Tokyo-based Sumisho Computer Systems Corp., Curl is a single language with a single syntax that handles the whole shebang — buttons, Web services calls, business logic. Bert Halstead, chief architect, adds that Curl doesn't suffer from one of AJAX's major problems: all those different language components. He notes that with AJAX, a major source of an app's complexity is the need "to decide which part of the application to build in which language." And complexity is further reduced, he adds, because Curl requires less code, since you don't have to write additional routines to connect the disparate language dots.

Halstead: AJAX is unnecessarily complex.

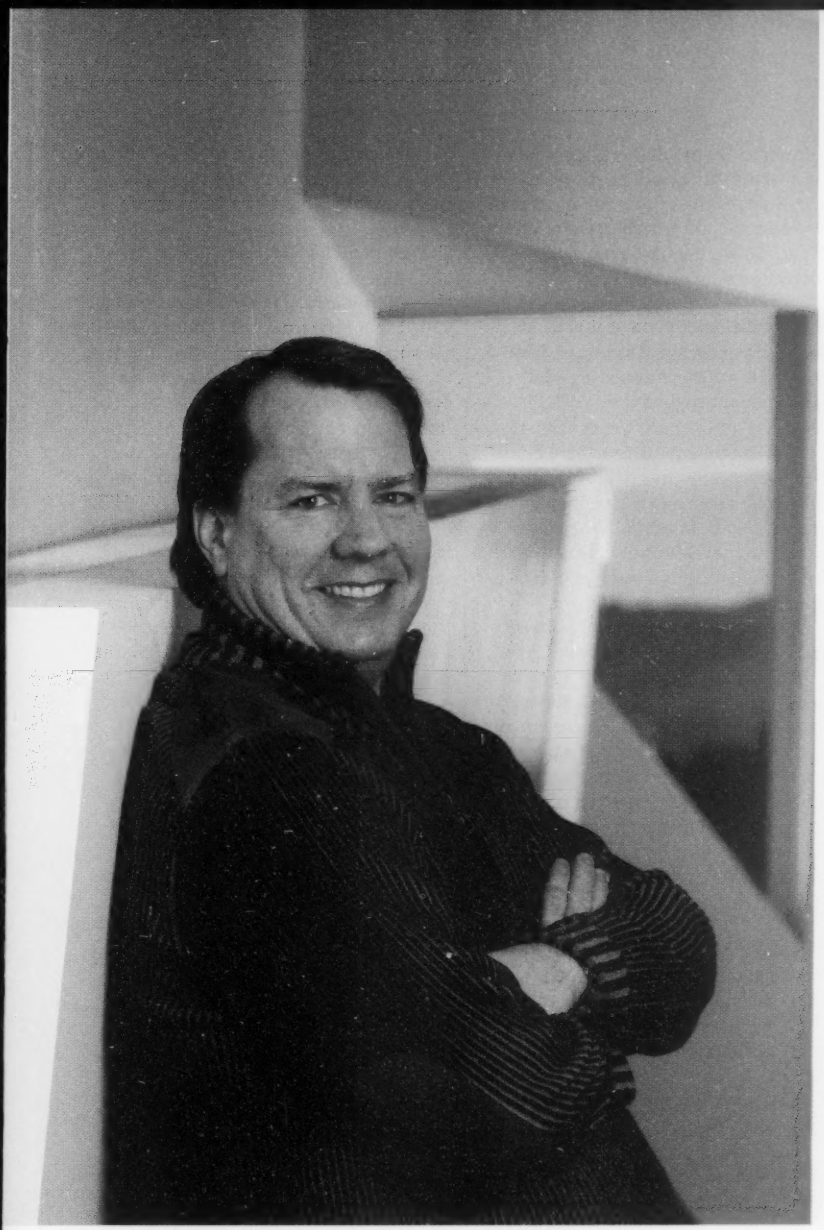
Monson-Haefel contends that RIA developers need to build programs that can run offline as effectively as when they're connected to data sources online. He says Curl can access multiple megabytes of data stored locally, making it possible to give mobile users capabilities previously available only to their desk-bound cohorts.

Currently, Curl has runtime environments for Windows and for numerous Linux distributions running Internet Explorer and Firefox. Now, a beta of a version for Mac OS X and Safari is nearly ready, Halstead says. And although there's a stand-alone IDE available, Eclipse compatibility is on the company's product road map. If RIA is on your road map, consider giving Curl a test-drive. ■

COMPUTERWORLD.COM

MORE BUZZ

Discover and discuss more industry action at the On the Mark blog: **computerworld.com/blogs/hall**



Dossier

Name: Dave Hitz

Title: Founder and executive vice president

Company: NetApp Inc.

Location: Sunnyvale, Calif.

The most interesting thing people don't know about him: He once ate a live beating snake heart.

His most memorable job: "I did spend one summer as a cowboy. I went to this little school with 24 students on a cattle ranch. Every year, they hired one student to handle 300 cows and 250 calves up in the mountains at about 10,000 feet."

Favorite food: "I like any food you can eat without a fork: sushi, burritos, Indian food."

Favorite movie: ***Drowning by Numbers***

Philosophy in a nutshell: "I tend to be a believer in rationalism and the scientific method. But people are more emotionally driven than rationally driven, even technical types who don't like to admit it."

■ **THE GRILL**

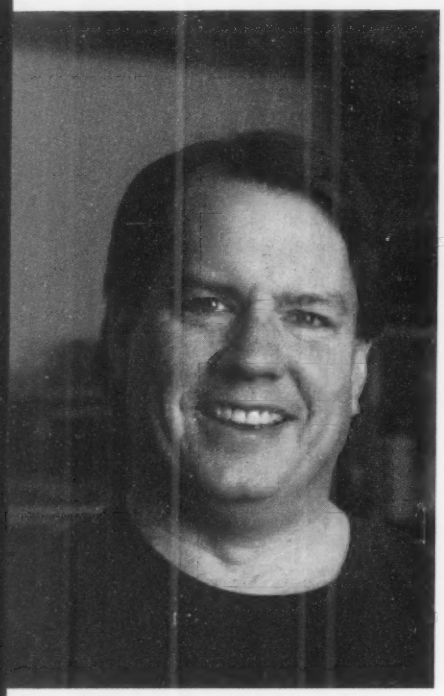
Dave Hitz

NetApp's founder talks about **running a 'grown-up company,'** working at the intersection of **technical and cultural changes** and viewing **life from the back of a horse.**

Dave Hitz founded NetApp Inc. (formerly Network Appliance Inc.) and helped it grow beyond its file-storage-in-a-box origins and tackle data center management and virtualization. The company is currently suing Sun Microsystems Inc. over legal ownership of the ZFS file system technology.

As a former upstart, how does it feel to be pursued by longtime storage providers like Hewlett-Packard? NetApp has been the subject of so many people saying they are going to come after us and kill us. In the early days, EMC actually went to Wall Street and handed out forks. They told people they were going to "stick a fork" in us. I guess I'd rank EMC higher to worry about than HP.

What was biggest challenge in going from start-up to top-tier storage vendor? The biggest challenge was the dot-com crash. During the boom, the bulk of



"In the early days, EMC actually went to Wall Street and handed out forks. They told people they were going to 'stick a fork' in us.

our business was people building chips and servers: Cisco, Yahoo, AOL. After the crash, a high percentage of that just disappeared. We decided to retool as an enterprise company and go after big data center business. That's when we got into the SAN space. That was a very difficult transition to go through. We hit [$1 billion in revenue] just before the crash. The crash took us down to about $800 million, and it was a two-to-three-year process to get back. But this time, [our business] was 70% nontech and Internet. Coming out of that, we were looking more like a grown-up company.

What are the tough choices that users will have to make about saving or deleting data? It's almost impossible for people who have data they've been collecting for so many years to start figuring out what to delete. The hours and manpower to figure it out makes it probably more expensive to delete it than to keep it. I had a CIO say to me, "There are two kinds of data: information deleted within a week and data kept forever."

The legal question is really interesting. Data very rarely disappears. You think you deleted your e-mail? Well there was someone on the other end of that e-mail, too. How many servers did it go through for delivery? How many times do you send an e-mail to just one person? In today's world, where electronic copies are spread all over, if there's an incriminating document, it's better you find out about it right upfront rather than [after] going to trial.

Will solid-state drives and flash storage affect enterprise storage? In my mind, there's no question this will happen. There have been so many times when some new storage technology came out that was going to displace disk drives. It's just never happened. None had any commercial success.

Flash is in every camera, every MP3 player. It's a classic disruptive technology moving up from below. In the same way PCs took out minicomputers, I think this year you're going to see large numbers of flash-based PCs where there's just no disk drive at all. I don't expect flash to be cheaper than hard disks anytime soon, but it's already moved into just about every type of consumer device, and laptops are the next to go.

Where is flash better than traditional hard disk drives? Flash is so much cheaper than RAM that I think you'll see a lot of people start extending the size of their caches with it. Flash is about 10 times more expensive than disk today. But in terms of random reads, it's about 100 times faster. You've got to think there's something clever you can do with that.

There will be a few applications and some very high-end transaction type of processing where people will say, "I wouldn't [use flash storage] for very much of my data but [would] for the particular load sitting behind my credit card processor." Some kind of high-performance transactional database like that — that's where I suspect flash will be used as the primary storage for production data.

Is the Sun/ZFS lawsuit a big distraction? Anytime you're talking with customers and you're not working with them to solve their problems, that's not the ideal situation. Talking about a lawsuit doesn't help. Technical people tend to be very interested in open source, and they're kind of curious about stuff.

Recently, all the suits were consolidated together into a single district in California, and that's actually very convenient for both of us. What's nice about that is that in all this conflict, you have this little ray of cooperation.

What lessons did you take to the boardroom from working as a cowboy? When I was out on the back of a horse looking out at 300 cows, there was no question in my mind about what I was doing and why it was worthwhile. I really think that employees are happier in their work when they have some kind of feeling that in the end they're helping people do something real.

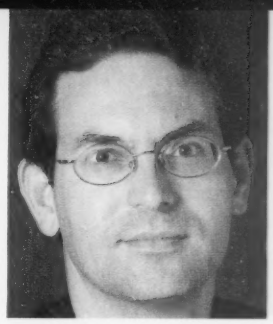
What does storage say about us as human beings? A number of forces have taken data straight to the heart of people's lives. Data that we're storing increasingly is information about you. It's pictures of your kid or it's your medical records or it's entertainment. It's becoming something that matters. In many cases, it's data that has strong legal ramifications. Data is transitioning from something that you only want to look at around the end of the month to something that — when you enter a hospital, they'd better damn well find out immediately if you're allergic to penicillin.

— *Interview by* **Brian Fonseca**

■ OPINION

John D. Halamka

The 10 Secrets Of Bad CIOs



IN MY decade as a CIO, I've seen a lot of turnover in the IT industry. Each time I hear about a CIO being fired, I ask around to learn the root cause. Here's my list of the top 10 ways to be a bad CIO.

1. Start each meeting with a chip on your shoulder. If a CIO presupposes that every request will be unreasonable and every interaction unpleasant, then every meeting will be unproductive. I find that listening to naysayers, understanding common ground and developing a path forward works with even the most difficult customers.

2. Set priorities yourself. Although the CIO should make some budget decisions — for instance, on infrastructure maintenance — customer-driven governance committees should help set the priorities for application development. Good intentions won't prevent mismatches between customer expectations and IT resource allocation.

3. Protect your staff at the expense of the organization. I work hard to prevent my lean and mean staff from becoming bony and angry. But I can't just say no to customers, so I work with them to balance resources, scope and timing. When compliance issues or strategic opportunities suddenly arise, I do my best to redirect resources to these new priorities, explaining that existing projects will slow down. It's important to tolerate some ambiguity, accept change, support the institution and, if a resource problem evolves, ask for help.

4. Put yourself first. Being a CIO is a lifestyle, not a job. Weekends and nights are filled with system upgrades. Pagers and cell phones go off at inopportune moments. On vacations, I get up an hour before my family and go to bed an hour after them to catch up on e-mail and the day's events. It's far worse to ignore it all for a week.

5. Indulge in tantrums. Walking into the CEO's office and saying that you will quit unless your budget is increased does not win the war. The CIO should be a member of senior management, and all resource decisions should be made by consensus, even if the outcome is not always positive for IT.

6. Hide your mistakes. A network outage my organization experienced in 2002 resulted in what was called "the worst IT disaster in health care history." Since I shared my lessons learned with the press and our customers, everyone understood the events that caused the problem. Transparency may be challenging in the short term, but it always improves the situation in the long term.

7. Burn bridges. It's a small world, and it's best to be cordial and professional in every encounter. Before I was CIO, I made a presentation to the IT steering committee about the need to embrace the Web. A senior IT leader told me that the committee didn't care what I had to say since I was not an important stakeholder. A year later, I became CIO, and that senior leader left the organization within a week.

8. Don't give your stakeholders a voice. I fill my schedule with meetings in the trenches to learn what is and is not working. I never shoot the messenger when I'm told that our products or services need improvement. A CIO can earn a lot of respect just by listening.

9. Cling to obsolete technologies. The CIO should never be the roadblock to adopting new technologies and ideas. If open source, Web 2.0 or Apple products are the way the world is going, the CIO should be the first in line to test them.

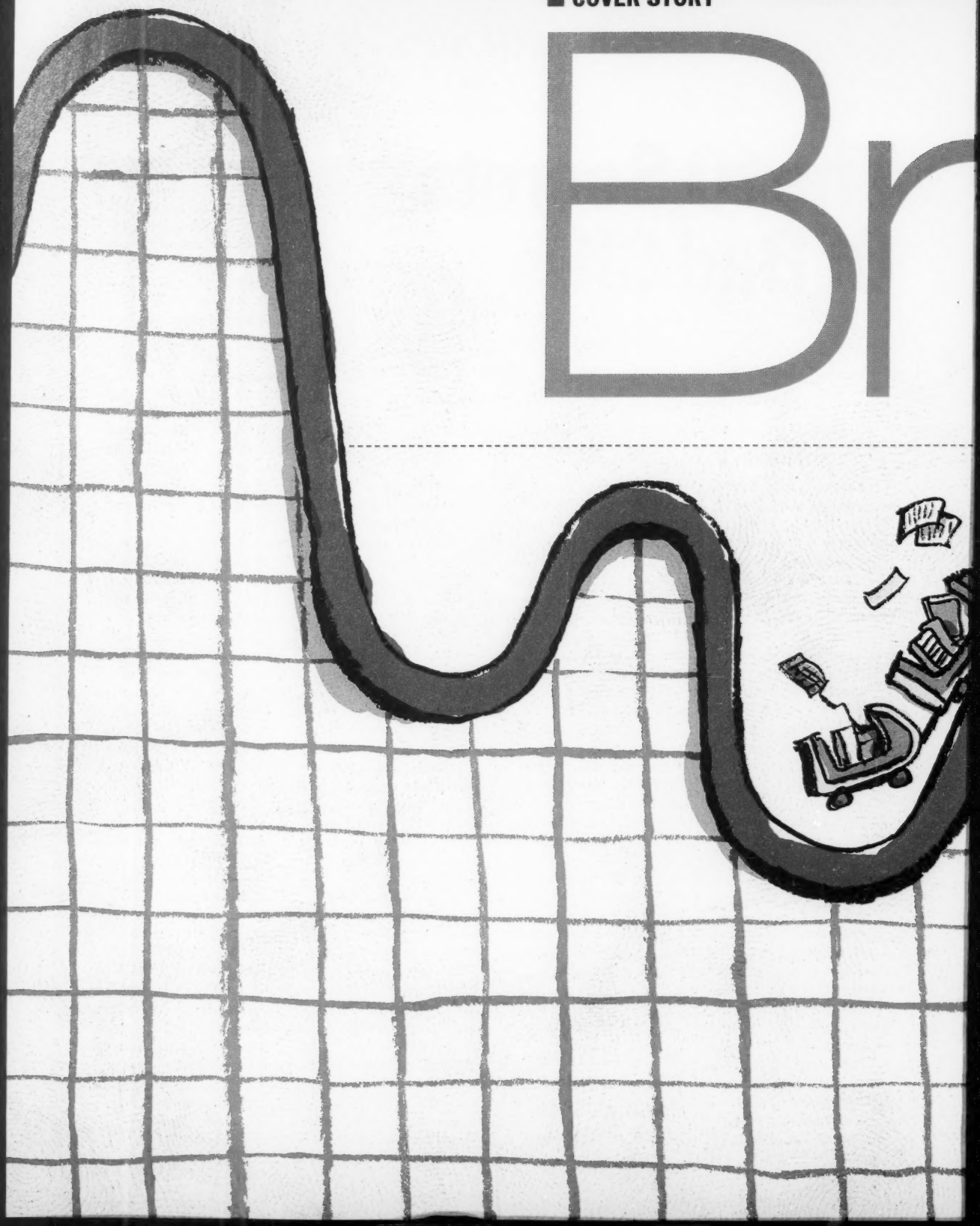
10. Think inside the box. Facebook as a rapid application development platform? Empowering users to do self-service data mining? Piloting thin-client devices and flexible work arrangements? Although exploring new ideas will not always result in a breakthrough, it's the only way to innovate.

Avoid these behaviors, and you may be embraced by the organization for many years to come. ■

■ Shun these 10 behaviors if you want to stick around.

John D. Halamka *is CIO at CareGroup Healthcare System, CIO and associate dean for educational technology at Harvard Medical School, chairman of the New England Health Electronic Data Interchange Network, CIO of the Harvard Clinical Research Institute and a practicing emergency physician. You can contact him at jhalamka@caregroup.harvard.edu.*

Br



As the economy heads south, CIOs are preparing in dramatically different ways than last time.

BY THOMAS HOFFMAN

acing FOR THE SLIDE

ILLUSTRATION BY ROBERT NEUBECKER

WHEN CompuCredit Corp. began feeling the sting of the subprime mortgage mess and resulting credit crunch toward the end of last year, CIO Guido Sacchi's IT organization was forced to absorb a 20% year-over-year hit to its annual IT budget.

But for Sacchi, that's where the similarities between handling the current economic slump and the one earlier this decade end.

Last time, IT budget-cutting was a one-time exercise. Now, Sacchi and his IT finance team are making weekly adjustments to the company's IT budget. They're using scenario planning to analyze changes in consumer spending and credit-market conditions in order to roll with the business and fine-tune its IT spending plans on an ongoing basis.

"I think today as CIOs, we have more tools to respond to those [financial] challenges," he says.

> "I think today as CIOs, we have more tools to respond to those [financial] challenges.
>
> **GUIDO SACCHI,** CIO, COMPUCREDIT CORP.

The situation at CompuCredit illustrates that the current economic deceleration is different for IT than the recession that followed the dot-com bust.

For starters, many IT organizations have risen to the status of business partners, and IT's visible contributions to corporate revenue growth and efficiency gains have made senior management more selective about cutting IT investments. Indeed, unlike during the previous economic downturn, where across-the-board IT cost-cutting was de rigueur, investments in certain technologies such as virtualization will likely continue to rise, thanks to the efficiency gains they generate.

Moreover, the shift to the use of IT contractors based anywhere from India to Indianapolis has enabled IT leaders to scale back their contract labor without resorting to layoffs. Also, any slowdown in IT spending caused by a slumping U.S. economy may be offset in part by strong international growth at many multinational corporations.

To be sure, the industries most directly and adversely affected by the housing bust and subprime mortgage madness have tightened their 2008 IT spending plans. In mid-February, Forrester Research Inc. lowered its prediction for

Continued on page 26

IBM, the IBM logo, WebSphere and Take Back Control are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. © 2008 IBM Corporation. All rights reserved.

_INFRASTRUCTURE LOG

_DAY 79: This is out of control! Our IT environment is rigid and inflexible. Our business needs are changing, but our environment isn't built to change with them. We can't adapt. Oh, no...I was afraid of this. We're so rigid, we're stuck in time.

_*Infrastructurus prehistoricus.* I've read about this.

_DAY 80: I'm taking back control with IBM SOA solutions. Now we can align business goals with our IT. We have the hardware, software and services we need to respond to change. Strategy, planning and implementation are in tune with our specific business needs. Now we can deploy and update business processes faster and more efficiently.

_Good-bye, rigid past. Hello, flexible future.

Attend IMPACT 2008, the IBM SOA conference. April 6–11, Las Vegas.
IBM.COM/**TAKEBACKCONTROL**/SOA

Continued from page 23

U.S. IT spending for the second time in two months, from a 4.6% growth estimate in December to 2.8%.

But "it's almost impossible to generalize IT spending changes by sector," says Howard Rubin, professor emeritus of computer science at Hunter College in New York. There are "microclimates" of economic impact and corresponding IT budget reactions that are occurring on a company-by-company basis, he explains.

There are stark differences in spending priorities now compared with the period following the dot-com bust.

In the late 1990s, companies of all stripes invested heavily in new systems during their Y2k preparations. At the same time, many businesses were making "speculative investments" to determine which Internet models might work for their organizations, notes Mark Settle, a former CIO at Corporate Express U.S. Inc. and Arrow Electronics Inc. who is currently between positions.

Once the economy began to soften in mid-2000, many CIOs were ordered to cut back on new development and stretch other systems investments. And some couldn't push back effectively because they had lost credibility among executives who perceived that the Y2k threat had been oversold.

BUSINESS VALUE

But things have changed. CEOs and other executives have become much more cognizant of the business value that IT investments can deliver, so they're generally more reluctant to cut back on projects aimed at increasing revenues or improving operational efficiency, says Hunter Muller, president and CEO of HMG Strategy LLC, a CIO consulting and advisory firm.

That's particularly evident within companies where CIOs have delivered solid results, have achieved a level of trust with senior management and are continuing to execute on three-to-eight-year IT-business strategies, he adds.

FirstHealth of the Carolinas Inc. CIO David Dillehunt says that even if the economy worsens, "there's very little I could stop doing" from a project execution standpoint. That's because the integrated health care network's clinical systems investments are aimed at "getting patients out the door faster" and reducing operating costs, he says.

A tendency to plan for the long term is playing out even in hard-hit industries.

For instance, although the 2008 IT budget at Lowe's Cos. will take a hit compared with last year's, the home improvement chain is continuing to expand its customer-facing and PeopleSoft ERP systems, says CIO Steve Stone. The retailer is also continuing a five-year effort to implement systems to help customers order specialty items that are out of stock at a particular store. Even in a down market, "you don't take those types of things off the table," he says.

Although research firms have toned down their U.S. IT spending estimates for this year, not all of the pullback is the result of a faltering economy.

For instance, IT spending in the North American retail industry is expected to rise just 4.3% this year, compared with 6% in 2007, but the reduction is more directly connected to the normal replacement cycle of in-store systems than with the current economic climate, says Greg Buzek, president of IHL Group, a retail and technology research firm. His findings are drawn from a recent retail and technology spending study that IHL Group conducted with *RIS News*, an industry trade publication.

If anything, "retailers are more likely to cut back on peripheral projects" in the face of lower consumer spending while retaining ERP and customer-facing initiatives that are core to their strategies, according to Cathy Hotka, a retail IT consultant in Washington.

That's true at Lowe's, where the company is retaining its "big ROI projects" but postponing "deferrable" efforts, such as upgrades of store desktop Linux devices whose life cycles can be extended, says Stone.

There are parallels in the investment banking community, which has gotten whiplashed by mortgage-related investments. For example, financial pressures in the sector have led Tabb Group Inc. to lower its estimates of IT spending increases for brokerages into "the low single digits," says Robert Iati, an analyst at the financial markets research advisory firm.

But the degree to which financial services companies feel an impact will depend on their level of exposure to shaky mortgage investments, Iati says. And even affected companies are not cutting IT spending across the board as they might have in the previous downturn.

In fact, the multibillion-dollar mortgage-related losses that big investment banks have racked up have spurred a 10% to 15% increase in risk-management-related IT spending, compared with the same period last year, says Iati.

He doesn't see much of a parallel be-

Five Steps TO RECESSION-PREP YOUR IT GROUP

There's no stopping an economic downturn. Just ask U.S. Federal Reserve Chairman Ben Bernanke. But CIOs and analysts say there are steps that IT leaders can take to prepare their organizations (and companies) for a monetary meltdown.

PLAN. Don't be put in the position of reacting. Know where you can shift IT spending among the "run," "grow" and "transform" areas of the business. Have a plan prepared for when the CEO or CFO confronts you.

PRIORITIZE. Expect to be more selective in your organization's project portfolio planning. Know which projects are discretionary and which are required. Work closely with the business to support it through shifting economic conditions.

EDUCATE. Help senior management understand that IT expenditures aren't overhead but rather are effective tools for increasing efficiencies and reducing costs.

MONITOR. Have your finger on the pulse of the IT staff. Understand everyone's contribution to the organization and prioritize staff skills, just in case you're required to cut people.

COLLABORATE. Make sure that business executives actively contribute to IT governance exercises so they'll be ready to help develop IT cost or strategy-shifting scenarios. Now more than ever, CIOs need to be skilled politicians.

– THOMAS HOFFMAN

tween IT strategies among Wall Street firms during the post-dot-com recession and now. "Back then, a lot of the focus was around initiatives such as straight-through processing and sending application maintenance work to India," says Iati. Nowadays, trading has become so globalized that many big banks will continue to invest heavily in new systems to gain competitive advantage. For example, they might build out new IT infrastructures in emerging markets such as China, he says.

"It's a time like I've never seen before," says Chris Barber, senior vice president and CIO at Western Corporate Federal Credit Union, who served as CIO at GlobeNet Stock Exchange Inc. from 1999 to 2003. Despite economic pressures, financial firms are reluctant to postpone investments for new trading systems for fear of being left in the dust by their competitors, he says. "The trading industry is moving so fast that if a competitor gets even one leg up, they're going to surpass you," Barber explains.

LEVERAGING RESOURCES

Another difference between the current economic environment and the previous downturn is that it's not just CIOs like Sacchi who have better tools to work with. CEOs and other business executives are all making much more extensive use of business intelligence systems and dashboards to track key performance indicators such as sales and inventory turns. As a result, business and IT organizations are reacting much faster to even subtle changes in business conditions.

"We tune very quickly now" to changing market conditions, says Chris Eberly, head of enterprise information management at ING Groep NV, a global financial services company.

Because ING's wealth management business in the U.S. has not yet been affected by the sputtering economy, its IT spending plans have also remained unchanged, says Eberly. But if ING's business does get squeezed down the road, its IT organization can react more quickly now than it could in previous economic cycles, because of its increased reliance on domestic and offshore contract labor.

In the early part of the decade, ING's IT organization was predominantly made up of full-time employees, says Eberly. But over the past five to eight years, ING has increased its reliance on contractors, allowing it to scale its IT labor pool up and down based on project demands and changes in business conditions, he says.

And people aren't the only resource being leveraged. The pressures that IT executives faced during the early part of the decade have taught them how to better stretch other resources as well.

For instance, companies are now much more likely to reuse software components for projects in other departments or across continents. ING has extended a reference architecture (a set of IT architecture best practices) developed in the U.S. to Asia, Europe and South America, says Eberly.

"One of the things we look at is how we can leverage work that's already been done," he says.

VIRTUALIZATION PUSH

Server, storage and even desktop virtualization opportunities are also driving many companies to up their investments in those areas in order to optimize their operations and drive down their costs. The threat of a recession only supports those priorities.

At Lowe's, prior to the launch of server virtualization efforts three years ago, the utilization rates of clustered Intel servers were in the "abysmally low" 10%-to-15% range, says Stone. Since the company's virtualization efforts kicked in, server utilization rates have soared into the 85%-to-90% range, and the retailer plans to continue those programs through 2008, he adds.

Meanwhile, CompuCredit has saved a few million dollars by consolidating 50% of its server base, thereby avoiding server purchases and related hardware and software licensing costs, says Sacchi.

Meanwhile, IT executives in many other industries are anxiously waiting to see how the slump will affect their businesses and IT spending plans.

"At this juncture, it's a yellow-light phase," says Jerry Luftman, associate dean and distinguished professor at Stevens Institute of Technology. "Many CIOs aren't being aggressive with their IT spending, but they're not cutting back yet," he adds.

"We're waiting here with baited breath," says Michael Israel, senior vice president of information services at Six Flags Inc., a theme-park company whose seasonal venues began reopening this month.

Although the company has cut its IT budget for systems at its parks by 50% from last year's level, it has increased its back-office spending plans by the same proportion to cover planned upgrades to accounting, food and inventory systems, Israel says.

Six Flags' IT spending plans remain "pretty good for this year," he says. "But as the season rolls out, we'll see."

So buckle up. The roller coaster ride has just begun. ■

Hiring Holds Steady – SO FAR

U.S. IT executives are leveraging global sourcing, but they're not pulling back the reins on domestic hiring. At least not yet.

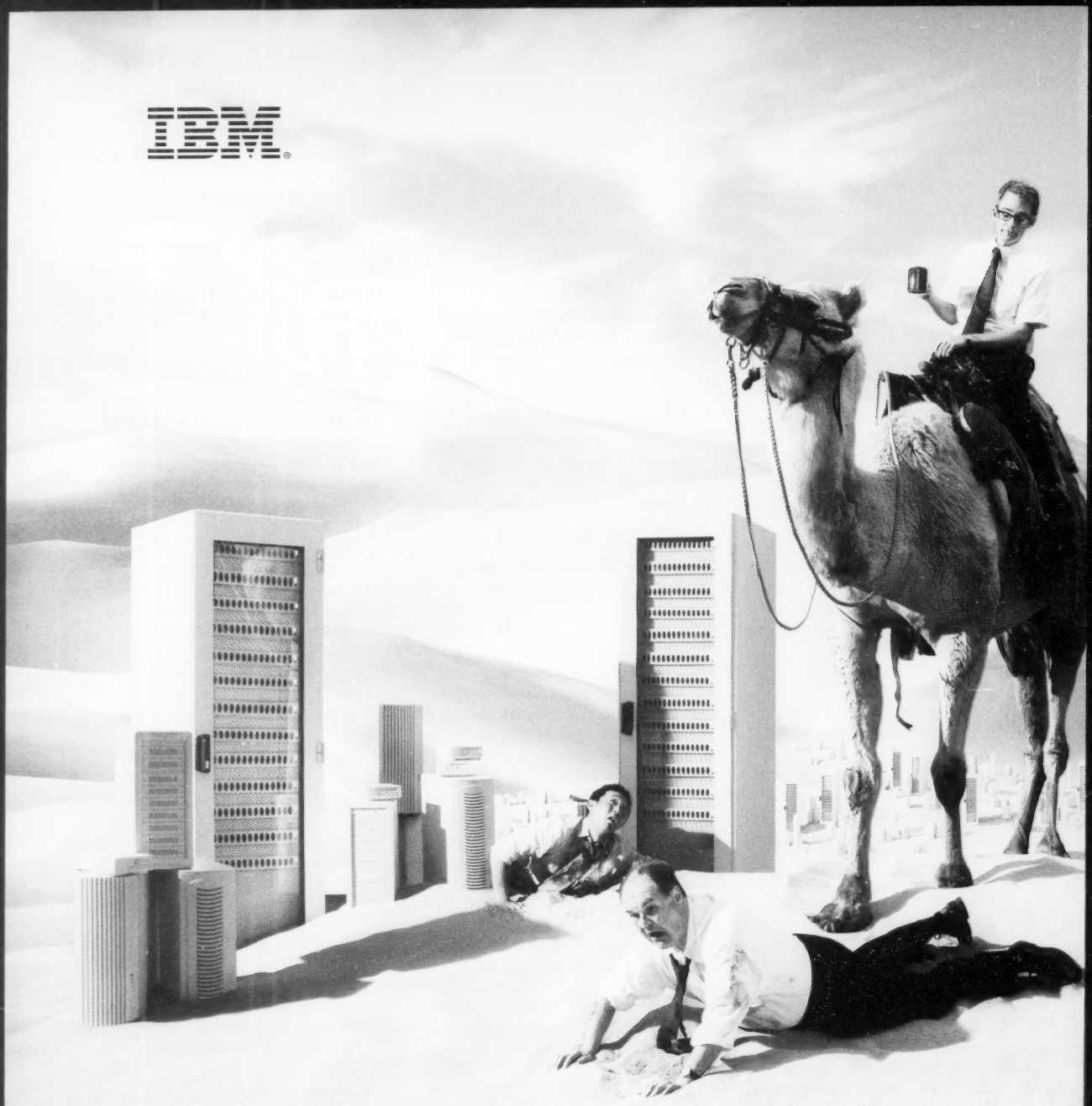
"I'm not hearing the term 'hiring freeze' too much yet, but it's in the wind," says John Bemis, a partner at recruiting firm Benchmark IT LLC. Most of his customers are moving forward with their IT hiring plans, says Bemis, but the mood is more cautious than it was last year.

Investment firm Wells Real Estate Funds Inc. has increased its IT budget by 5% to 10% this year, and it's seeking to hire employees with Oracle ERP, document management and help desk skills, says Barry Cohen, vice president of applications management.

IT hiring has also continued apace at some companies that have tightened their IT budgets in other areas. CompuCredit has cut its IT budget by 20%, but CIO Guido Sacchi recently hired two virtualization specialists and an outsourcing relationship manager.

In the event of an extended recession, the fortunes of many IT groups will ultimately depend on their reputations, says Chris Barber, senior vice president and CIO at federal credit union WesCorp. "Our relationship with the business units is what gives us that credibility," he says.

– THOMAS HOFFMAN



[1]Available on select models. IBM, the IBM logo, Tivoli and Take Back Control are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. ©2008 IBM Corporation. All rights reserved.

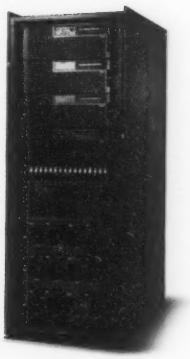
_INFRASTRUCTURE LOG

_DAY 85: Woke up in a desert. Our data center is overheating so badly it's playing tricks on our minds. We have to do something about these energy costs. But how? Our processing needs keep growing.

_Maybe that sphinx over there has an answer.

_DAY 86: I'm taking back control with IBM. Their services can help us diagnose inefficiencies and build a more energy-efficient data center. A virtualized IT environment can improve our server and storage utilization while their power management capabilities help us actively manage our power usage.[1] And thanks to IBM's advanced cooling solutions, our data center is cucumber cool.

_Good thing. My wrinkle-free shirts really aren't very breathable.



Tivoli.

Watch a Webcast on data center energy efficiency at:
IBM.COM/**TAKEBACKCONTROL**/ENERGY

Back to Basics: Algorithms

Computer scientists look for simplicity, speed and reliability. Sometimes they find elegance.

BY GARY ANTHES

> *As the mind learns to understand more complicated combinations of ideas, simpler formulae soon reduce their complexity.*
> **– Antoine-Nicholas de Condorcet, 1794**

THE WORD *algorithm* was derived from the name Al-Khwarizmi, a 9th-century Persian mathematician and author of *The Compendious Book on Calculation by Completion and Balancing*. But nowadays the word most often applies to a step-by-step procedure for solving a problem with a computer.

An algorithm is like a recipe, with a discrete beginning and end and a prescribed sequence of steps leading unambiguously to some desired result.

But coming up with the right answer at the end of a program is only the minimum requirement. The best algorithms also run fast, are sparing in their use of memory and other computer resources, and are easy to understand and modify. The very best ones are invariably called "elegant," although Al-Khwarizmi may not have used that term for his formulas for solving quadratic equations.

An algorithm can be thought of as the link between the programming language and the application. It's the way we tell a Cobol compiler how to generate a payroll system, for example.

Although algorithms can end up as thousands of lines of computer code, they often start as very high-level abstractions, the kind an analyst might hand to a programmer.

For example, a lengthy routine in that payroll system might have started out with this algorithmic specification: "Look up the employee's name in the Employee Table. If it is not there, print the message, 'Invalid employee.' If all other data on the input record is valid, go to the routine that computes net pay from gross pay. Repeat these steps for each employee. Then go to the routine that prints checks." The gross-to-net and check-writing routines would have their own algorithms.

REALITY INTRUDES

Of course, it isn't quite that simple. If it were, the study of algorithms would not have become a major branch of computer science and the subject of countless books and doctoral theses.

But it's not hard to imagine computer engineers in the 1950s thinking they had pretty much finished the job. They had invented stored-program electronic computers, and languages like Fortran and Cobol to run on them, and they had largely banished the agony of assembly language programming. In fact, software pioneers such as Grace Hopper saw compilers, and the algorithms that instructed them, as such an advancement — they could "understand" English — that they named the first computer to use one the Universal

The word *algorithm* is named after mathematician Al-Khwarizmi.

Automatic Computer, or Univac. With adjectives like "universal" and "automatic" in its name, the computer could almost be expected to program itself.

But in the 1960s, computers moved into the business world in a big way, and soon two ugly realities intruded. The first was the matter of "bugs" — a term coined by Hopper. Computers made lots of mistakes because programmers made lots of mistakes. The second was sorting, a machine-intensive job that came to dominate, and sometimes overwhelm, computing.

Virtually every major application required sorting. For example, if you wanted to eliminate duplicate mailings from your customer master file, which was sorted by customer number, you might have had to re-sort it by last name within ZIP code. Sorting and merging big files often went on repeatedly throughout the day. Even worse, very few of the records being sorted would fit into those tiny memories, and often they were not even on disk; they were on slow, cumbersome magnetic tapes. When the CEO called the data processing shop and asked, "When can I get that special report?" the DP guy might have said it would take 24 hours because of all the sorting that was needed.

So IT people learned that algorithms mattered. The choice of algorithm could have a huge effect on both programmability and processing efficiency.

If algorithms were simple, they could be easily coded, debugged and later modified. Simple ones were less likely to have bugs in the first place, and if you used an existing algorithm rather than inventing your own, some of the debugging had already been done. But simple ones were often not the most efficient. They were not the ones that would speed up sorting enough to give the CEO's request a same-day turnaround.

THE SEARCH FOR ELEGANCE

Computer science took on these challenges and came up with families of algorithms with fancy names like "Induction," "Recursion" and "Divide and Conquer." And programmers developed methods (themselves algorithms) for assessing the efficiency and general goodness of algorithms.

A simple sort algorithm called Bubblesort was developed early on. It involved reading through the file to be sorted, looking successively at pairs of adjacent records. If they were out of order, the two records in the pair were simply swapped. By passing through the file repeatedly and overlapping the pairs, in-sequence records would "bubble up" to the top until eventually the entire file was in sequence. It was easy to understand, program and debug, but it wasn't very efficient because it required many passes through the file.

Descriptions of all the clever algorithms that improved on Bubblesort would fill a book, but many students of algorithms would give the grand-slam award for elegance to Quicksort, which was invented in the early 1960s by Charles Antony Richard Hoare, a British computer scientist. (See box above.)

Depending on file size and other factors, it can take Quicksort just seconds to sort a file that would take other routines minutes or hours to process. Hoare, who also pioneered methods for proving the correctness of programs, was knighted in 2000 for his achievements.

Another exercise in algorithms is the famous "traveling salesman problem" (TSP), in which a salesman leaves from home to visit a number of cities and wants to minimize his distance traveled. If there are five cities to visit, there are 60 possible routes to choose from, and the obvious algorithm is to compute the distances for all of them and pick the best one. But the TSP suffers from an unfortunate phenomenon known as "combinatorial explosion."

If there are 10 cities to visit, there are 1.8 million paths, and at 20 cities, the poor salesman (or his computer) has 121 quadrillion routes to consider. Clearly, at some point, the try-them-all algorithm becomes impractical.

So mathematicians and computer scientists have come up with all kinds of ingenious ways to "solve" the TSP, which is but one example in a broad class of important problems. Some algorithms give exact solutions for, say, a few hundred cities or less. But with bigger problems, we usually turn to the so-called heuristic algorithms that produce "pretty good" but not optimal solutions. There is a dizzying assortment of such things, including dynamic programming, genetic algorithms and Markov chains.

But if you have 1,000 cities to visit and you don't have a Ph.D. in mathematics, you might try the "nearest neighbor" algorithm, which has proved to be remarkably good in many cases. With this algorithm, at each city, you simply next travel to the nearest unvisited city, and you keep doing that until you have gone to every one. ■

The Quicksort Algorithm

In the early 1960s, British computer scientist Charles Antony Richard Hoare developed the Quicksort algorithm for sorting a list into a sequence. This one is ascending:

1. Pick any element, called a "pivot," from the list.

2. Pick in turn every other element, comparing each to the pivot. If the element is less than the pivot, put it above the pivot. If it is greater, put it below. At the end of that pass through the list, the pivot is now in its final correct place.

3. In the group of elements above the pivot, pick another pivot and repeat Step 2. In the group below the original pivot, pick a third pivot and repeat Step 2. Now three elements have been sorted into their correct positions.

4. Repeat the entire process, on successively smaller groups, until the whole list is in sequence.

Whereas Bubblesort involves moving records very small distances toward their final resting places, and moving them repeatedly, Quicksort never has to relocate an element once it is in the right place.

– GARY ANTHES

The Economics Of Energy

Tiny forecasting errors can cost energy firms millions. Direct Energy's software offers precision. By Stacy Collett

BEST IN CLASS This story is third in a series showcasing the best projects of this year's Premier 100 IT Leaders.

Direct Energy

Based in Toronto, Direct Energy provides customers with a portfolio of products and services to help manage energy costs. The $8 billion company, a subsidiary of Centrica PLC, has about 5 million residential and commercial customers in Texas, in the northeastern U.S. and across Canada.

IT CHAMPION: Kumud Kalia, CIO and executive vice president of customer operations

IT STAFF: 350

PROJECT PAYBACK: Northstar, an energy forecasting system developed in-house, reduced the forecasting error rate to less than 2% in most cases, delivering an ROI of 150% over four years.

PREDICTING how much energy a household will use in the future — perhaps a year or five years from now — is the lifeblood of Direct Energy. The company traditionally forecasts energy consumption at an error rate of less than 4%. That's better than industry standards, but even a small miscalculation could mean millions of dollars in losses.

Predicting long-term energy needs is tricky, says Craig Williamson, practice director at research firm Energy Insights in Boulder, Colo. In a March 2006 survey of 25 utility companies, Williamson found that about 40% had formal targets for determining how closely forecasts matched actual consumption six months to 30 years down the road. The other 60% didn't have goals or just didn't track the accuracy of their forecasts, "because it's difficult to do," he says.

Still, Direct Energy's IT team thought the company could do better. It proposed a way to improve forecasting accuracy that would combine some off-the-shelf technology with specialized forecasting techniques — all developed by in-house staffers. The new system would allow the company to expand and improve the product without relying on outside consultants or programmers. Significant cost savings would also be realized.

The IT team partnered with key stakeholders, including in-house meteorologists and statisticians, to launch the initiative, known as Project Northstar.

In April 2006, "we started fresh — nothing from the previous system," says Hugh Scott, vice president of wholesale and risk information systems. The IT team relied heavily on SQL Server 2005, although Scott admits to initially experiencing a "little bit of nervousness" with the product because it was new at the time.

One of the key pieces of functionality is a backcasting feature developed by the IT team. At Direct Energy, "backcasting" refers to looking at what has happened with weather and energy consumption in the past and determining whether their relationship was predicted correctly.

"It allows you to correlate the accuracy of those predictions with the accuracy of the energy forecasting software. That improves your methodology," says Kumud Kalia, CIO and executive vice president of customer operations.

The algorithms in the forecasting system measure weather conditions, water levels and geographic characteristics — just some of 100 different inputs that go into energy forecasting.

The new system went into full production just six months after the project began. But although Northstar was developed quickly, users weren't ready to accept it right away.

"It took a while to gain acceptance," Kalia says, noting that employees ran the old and new systems side by side for three to five months before switching over exclusively to Northstar. "It's understandable," he adds. "If the new system turns out to be wrong but people accept it, we could lose millions of dollars just as easily."

Kalia says that in retrospect, he would have specifically defined what conditions had to be met in order for the new system to be deemed "acceptable" and the old system cut off.

But so far, Northstar is proving itself. "It accurately forecast our Texas customers at 17 million megawatt-hours of electricity usage within the target error rate of 3%," Scott says. Today, Northstar is being used across multiple business units at Direct Energy, and they're predicting energy consumption rates into 2012.

With all intellectual property maintained in-house, a calculated return on investment of 150% for four years (900% total ROI) and potentially millions of dollars in savings due to decreased risk, Kalia says, "Northstar has surpassed all expectations." ■

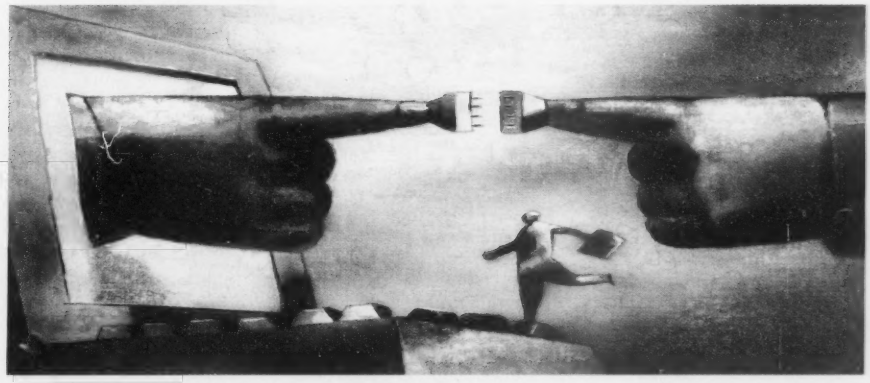
Collett *is a* Computerworld *contributing writer. Contact her at Stcollett@aol.com.*

If the new system turns out to be wrong, but people accept it, we could lose millions of dollars just as easily.

CIO AND EXECUTIVE VICE PRESIDENT OF CUSTOMER OPERATIONS

Innovations by **InterSystems**

Embed the ability to connect.



For software developers seeking competitive advantages, InterSystems Ensemble® offers an easy way to make applications more valuable. Embed our rapid integration platform in your applications, and they will easily connect with the existing systems of your customers and prospects. Plus, Ensemble enables you to enrich legacy applications with adaptable workflow, browser-based user interfaces, rules-based business processes, and other new features that users want – without rewriting. Embed our innovations, enrich your applications.

InterSystems ENSEMBLE®

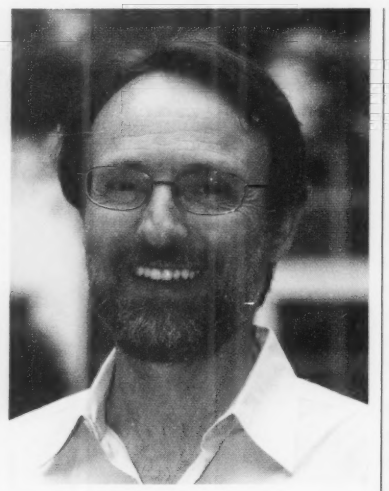
Make Applications More Valuable

See a demonstration of Ensemble at **InterSystems.com/Ensemble25A**

© 2007 InterSystems Corporation. All rights reserved. InterSystems Ensemble is a registered trademark of InterSystems Corporation. 10-07 EmbedEns25 CoWo

Just-in-Time Talent

How to develop a supply chain of people.



Two-thirds of U.S. employers are doing no workforce planning of any kind, says **Peter Cappelli**, *and the advice they're getting about how to start is based on 1950s realities. In this month's* Harvard Business Review, *Cappelli, director of the Center for Human Resources at the University of Pennsylvania's Wharton School, says the best way to look at talent is through a supply chain lens. He told Kathleen Melymuka how to do it.*

How is talent management similar to supply chain management? Supply chain management is about anticipating what the organization is going to need internally to produce products or services, and talent management is the same thing — anticipating the talent needed by the organization.

You cite several issues in supply chain management that relate directly to talent management. The first is the "make or buy" decision. How does that play out? A lot of organizations feel that they're either going to hire on the outside or develop talent from within. For some companies, it's a matter of principle that they make their own talent. Others by default hire outside. Companies ought to be thinking not either/or, but some of both. You ought to be thinking almost job by job. For some jobs, it makes sense to do more internal development, and for others, it doesn't.

You write about the issue of reducing risk in forecasting demand. How do I do that with talent? The big problem in talent management is companies don't even recognize that the decisions they're making are uncertain. This is where operations research has laid the groundwork. The first thing is to get a sense of how wrong we will be. The easiest way to look at that is to ask, How wrong have we been before? Next is to ask, What happens when we're wrong? Do we have too much talent or not enough? A generation ago, the cost was bigger if you didn't have enough talent. In most companies now, the problem is worse if you have too much talent, because you've made investments in people and you have to lay them off or you're paying them and just parking them someplace. A deep bench is inventory, and inventory is costly. So today, the bigger risk is having too much talent. So if you think about development internally to the point where you're pretty sure you will not go long; on average, you will fall short. But that's not such a crisis, because you can pretty much hire from outside. It's expensive to do it, but you need to do only a little bit if you don't end up too far off [in your estimate].

Another parallel issue is improving the return on investment. How does that work in terms of developing employees? One of the big problems companies have when they invest in employees is that people walk out the door. It's hard to make any investment in people [pay off] if they leave after you invest. There are lots of solutions to that. Maybe the most important is to get employees to share some of the costs of development, because they get most of the benefits because they can walk out with them. The best way to do that is to get them to do [developmental assignments] in a way where a lot of the work is done on their own time in addition to their own assignments. Tuition reimbursement is a great example. They do it on their own time. ■

A Supply Chain Framework

The Wharton School's Peter Cappelli suggests four foundations for a supply chain view of talent management:

'Make' and 'buy' to manage risk.
- Undershoot your estimates of the talent you need to develop.
- Make up the shortfall with outside hiring.

Adapt to the uncertainty in demand for talent.
- Break development programs into shorter units for more flexibility.
- Create an organizationwide talent pool to be allocated as needed.

Improve ROI in development.
- Ask employees to invest their own time in stretch assignments.
- Maintain relationships with former employees who may return someday.

Protect your investment by balancing employee/employer interests.
- Have employees share in advancement decisions.

ADAPTED FROM THE *HARVARD BUSINESS REVIEW*

Paving the new wireless roads to your business and enterprise

Mobile & Wireless World

June 9-10, 2008 • Marriott Doral Golf Resort & Spa, Miami, Florida

Attend Mobile & Wireless World and learn how to:

- Maximize the value of your mobile-intensive applications
- Improve business processes by mobilizing field workers
- Capitalize on convergence/unified communications
- Safeguard your wireless infrastructure

Topic areas include:

- Maximizing the Value of Mobile-Intensive Applications
- Improving Business Processes by Mobilizing Field Workers
- Capitalizing on Convergence/Unified Communications
- Safeguarding the Wireless Infrastructure
- Adopting a Sensible Device Management Strategy
- Seizing Value from Emerging Wireless Technologies

FEATURED PRESENTERS FOR 2008 INCLUDE:

Timothy Cox
Chief Information Officer, OnStar/GM

Randall Headrick
Chief Information Officer, Air National Guard

Mark Hilbush
Vice President, Information Services, UPS

Mike Pennella
Senior Vice President and e-Commerce Product Development Executive, Bank of America

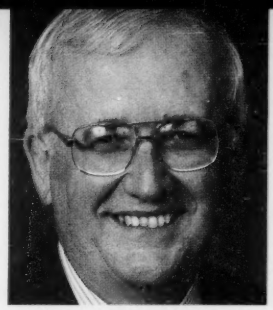
For complete details, or to register:
www.mwwusa.com/cwad

MOBILE & WIRELESS WORLD

■ OPINION

Paul M. Ingevaldson

Only the Tough Questions



A DEPTNESS AT DELEGATING is one of the toughest skills for IT managers to develop. Why? Because you learn very quickly in technology that whatever it is, if *you* do it, it will be done right. During your nonmanagerial life, you learned that allowing others to participate in a project that you're responsible for is a sure way to have problems.

Then, suddenly, you're a supervisor, and your whole world changes. Now you're being held responsible for a much bigger segment of work, and you must use others to get the job done. "Yikes, why did I take this job?" you wonder. "How do I ensure that these people know what to do? How do I verify that they do things right?"

There are books, articles and courses on this subject that can be very useful as you begin to learn how to manage. But for me, there was one important question that I always asked myself: How do I know when I am delegating enough?

I think that the answer is very simple: You are not delegating enough if the questions that you are getting are easy for you to answer.

Yeah, that's right. As a manager, you have time for only the tough questions. If you are handling the easy ones, then you are wasting time on matters that should be handled at a lower level and the productivity of your group will suffer.

Here's how to evaluate your delegation propensity. If your subordinate comes to you with an easy question, then there are two possibilities. First, the subordinate doesn't have the confidence to make the decision and wants validation from you, the boss. In this case, you must be careful not to answer the question but to tell the subordinate that he should trust his own instincts and make the call. In this way, he will have an opportunity to grow as a person and will begin to gain the confidence that he's lacking. You also will be able to monitor his decision-making ability.

■ You are not delegating enough if the questions that you are getting are easy for you to answer.

The second possibility is that the answer was indeed simple but you didn't share the necessary information, requiring the subordinate to ask the question. This may mean you retain some information in order to feel that you have not lost control, but it causes your people to be frustrated and to feel that you don't trust them. It's important for you to disclose to your subordinates all of the information that they need to do their jobs.

Well, then, if you tell your subordinates everything, what's your job? Don't worry. There is always more to do. The main role of the boss is to work at the intersections. By that I mean that any organization must interact with peer organizations to get the job done. This is where the supervisor can have the most impact; it's not where subordinates should spend their time. When you hear the phrase "That's above my pay grade," this is exactly what it means. This is the boss's turf, where relationship-building and mutual understanding create successful projects.

So the next time you meet with a subordinate, ask yourself this: Is the question too easy, and if so, should he have known the answer, or is it my fault that he doesn't? By analyzing each of these encounters and taking the appropriate actions, you will grow your people and improve the productivity of your organization.

Of course, once you have accomplished this, you will have time for only the tough questions. That will make your days harder and your nights more sleepless. That sounds like an accurate description of management to me. Welcome aboard! ■

Paul M. Ingevaldson *retired as CIO at Ace Hardware Corp. in 2004 after 40 years in the IT business. Contact him at ingepi@aol.com.*

Career Watch

Hot Skills Report

SKILLS THAT CIOs MOST OFTEN SAID THEY WERE SEEKING	PORTION OF CIOs SEEKING THEM
Network administration (LAN, WAN)	72%
Windows administration (Server 2000/2003)	69%
Desktop support	68%
Database management (Oracle, Microsoft SQL Server)	66%

SOURCE: ROBERT HALF TECHNOLOGY'S IT HIRING INDEX AND SKILLS REPORT FOR THE SECOND QUARTER; SURVEY OF CIOs AT OVER 1,400 U.S. COMPANIES WITH 100 OR MORE EMPLOYEES. MULTIPLE RESPONSES ALLOWED.

FOTOLIA

Want to Get Ahead? Say 'Please'

70% of executives and managers at small companies said good manners are important in advancing one's career.

Only 55% held that view at large companies.

SOURCE: NFI RESEARCH SURVEY OF 2,000 SENIOR EXECUTIVES AND MANAGERS, AUGUST 2007

Optimism on Hiring

McKinsey & Co. just put out a survey showing that executives worldwide are worried about economic indicators and inflation. But despite that overall pessimism, they are quite upbeat about the prospects for expanding their own workforces. Here's how North American executives responded, in both December and January, when asked how they expect the size of their companies' workforces to change over the next six months:

BASE: 1,409 RESPONDENTS IN DECEMBER; 2,700 IN JANUARY

PAGE COMPILED BY JAMIE ECKLE.

Spouses Out-Clout Mentors

At least that's the case among the 150 senior executives – including ones from human resources, finance and marketing departments – surveyed at large companies in the U.S.

Which one of the following people would you most likely approach first for advice when thinking of a potential job change?	2007	2002
Spouse or significant other	46%	42%
Mentor	41%	28%
Co-worker	4%	13%
Other family member	4%	5%
Friend	3%	11%
Someone else	2%	1%

SOURCE: ACCOUNTEMPS, JANUARY 2008

■ CAREER FOCUS

Project Management

BY GREG FOUQUET

There's little that would better enhance a project manager's career than successfully shepherding a project through the usual litany of problems: unreasonable deadlines, inadequate resources, lack of management support and shifting priorities, to name a few.

Since none of those problems can be resolved solely through the use of project management tools and technologies, the tendency is to say that such setbacks are beyond your control. But the truth is, you can overcome these impediments, partly by focusing on soft skills like relationship-building, collaboration and communication.

Here are three basic tenets that should help any project manager meet the challenge of this change in mind-set and thus achieve a successful career and a better project track record.

1 Serve the client. Project managers have traditionally been held accountable for three things: delivering on time, on budget and according to requirements. But there's a fourth accountability: client service. As an agent of the client, your job is to provide service professionally, competently and with the best interests of the client in mind. This can be done only by understanding the client's interests, challenges, history and relationships with others in the business. After all, you can't provide good service if you don't know whom you're serving and why. Sufficient domain knowledge is also essential, in order to provide leadership by asking the right questions.

2 Grow the team. Nurturing a good team is not an engineering project. It's more akin to agriculture, where you start with good seeds, put them in fertile soil, provide them with water and sunlight and, with a little luck, get rewarded with a successful crop. Take the time to ensure that your relationships with the team are in good repair. Then be ruthlessly efficient with everything else. It's also important to create an open environment, where team members can broach issues and concerns.

3 Own the project. You need to act with the conviction that the project is a personal reflection of your talents, abilities and values. Without a courageous stake in the project, you won't be able to make the hard calls that a project often demands.

Fouquet *is a senior consultant at Ouellette & Associates Consulting Inc. in Bedford, N.H., and co-author of* The IT Professional of the Future, *due out this year.*

IT Opportunities

Due to our rapid growth, we have the following positions available:

Programmer Analyst: Analyze, design, develop, code, test and maintain database management systems. Must have at least a Bachelor's degree and 3+ years of experience and the ability to use Mainframe, DBA, AS400 and Client-Server Tools.

Project Managers/Leaders: Lead a team of programmer analysts and data base administrators on development and maintenance of hardware and software applications as well as be responsible for project planning and quality assurance. Must have a Bachelor's degree and 5+ years of experience and the ability to use Mainframe, DBA, AS400 and Client-Server Tools.

Business Development Managers/Directors: Manage sales activities and achieve sales quota for assigned territory. Help Syntel's sales leadership in planning and rolling out an inside sales strategy. Must have a Bachelor's degree and 3+ years of experience.

All positions are located throughout the U.S. and travel is usually required.

Above positions commonly require any of the following skill sets:

Mainframe: IMS DM/DC OR DB2, MVS/ESA, COBOL, CICS, Focus, IDMS or SAS.

DBA: ORACLE OR SYBASE DB2, UDB

Client-Server/WEB: Ab-initio • Oracle Applications & Tools • Websphere • Lotus Notes Developer • VB, Com/Dcom, Active X • Web Architects • UNIX, C, C++, Visual C++, C#.NET, ASP.NET, VB.NET • SAP/R3, ABAP/4 or FICO or MM & SD • IEF • Datawarehousing and ETL tools • WiNT • Oracle Developer or Designer 2000 • JAVA, HTML, J2EE, EJB • RDBMS • PeopleSoft • PowerBuilder • Web Commerce

AS400: RPG, ILE, Coolplex

Please forward your cover letter and resume to: Syntel, Attn: Recruitment Manager
525 E. Big Beaver, Ste. 300
Troy, MI 48083
E-mail: syntel_usads@syntelinc.com EOE

SYNTEL
www.syntelinc.com

Computer Professionals needed (Bucks) PA based IT firm, Jr. Level Positions Programmer Analysts, Software Engineers, to Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions.
Sr. Level Position, IT Managers, needed to Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.
Apply with 2 copies of resume to H.R.D, Sricom, Inc., 2075 Byberry Rd, Ste # 105A, Bensalem, PA, 19020

Sigma Corp seeks Systems Analyst to work at our headquarters in Cream Ridge, NJ. Maintain inventory system software and modify as necessary to integrate it with accounting system software. Design or customize software programs to automate manual tasks. Interface software with hardware. Must have Master's degree. Fax resume to Dave Press at (609) 758-1399. Put Job Code SA 08 on resume.

With 35 branch offices located across the US, COMSYS is actively recruiting for the following positions.
Systems Engineer – metro Bellevue, WA– Code # BE130
Programmer Analysts – metro Houston, TX– Code # HO120
Roving employment to varying jobsites throughout the US. Please refer to appropriate job code when submitting resume to: COMSYS, Attn. Nancy Theriault, 15455 N. Dallas Pkwy., Ste 300, Addison, TX 75001. EOE./MF/DV

Sr. QUALITY ASSURANCE ENGINEER - Improve, review & ensure the quality of software products in the area of RouteDynamics software & development in customer networks. Design & implement test cases for conformance & performance analysis using protocols such as BGP & OSPF. Create automation scripts & process improvements for more efficient Quality Assurance. MSEE or (BSEE + 5 yrs exp) req'd. 35 hrs/wk. Send res to Iptivia Inc, 11 Broadway, Ste 1300, New York, NY 10004

Labor Certification Ads

Are you an individual, agency or law office needing to place ads to fulfill legal requirements?

*

Let us help you put together an efficient, cost-effective program that will help you place your ads quickly and easily.

For more details, contact us at: 800.762.2977

IT|careers

Computer

We are looking for the following IT professionals with >1 year experience, for our New York, New Jersey, Illinois, and Pennsylvania offices:

Programmer/Analyst; Systems Analyst; Database Adm.; Database Analyst; Lan/Wan Adm.; Software Engineer; Web Developer; Data Warehousing Architect; Business Analyst; Solutions Sales Execs; QA/Tester; QA Analyst; Technical Recruiter

Needed skill sets:
Client/Server, ERP-SAP, Oracle, PeopleSoft, Internet, E-Commerce, Mid-Range, AS/400, CRM-Siebel, Data Modeling, mainframe, Java, .net

Please e-mail your resume to: rirjobpost@rcgit.com referencing Job Code: PrintAdCW3. We are an Equal Opportunity Employer. M/F/D/V

www.rcgit.com
RCG Information Technology

IT|careers

Searching for *diverse* IT Talent?

Let Computerworld IT careers put your recruitment message in front of over 1,400,000 qualified IT professionals!

Contact Laura Wilkinson for details at laura_wilkinson@itcareers.net or call 847.441.8877

Computers

Wells Fargo has an opening for Web Developer 4 in Minneapolis, MN. Will perform computer programming of complex web-based applications using Java and related technologies. Please send resume via www.wellsfargo.com/jobs. Please reference job code 306028 when submitting resume

Sr. SAP Consultant to work at unanticipated worksites, headquarters in MD. Experience essential. Send resume to HR, Atrinova, Inc., 111 Sundown Rd., DeBary, FL 32713. Must ref job code SrSAPCons.

Shark Tank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Guru Logic

Panicked call comes in to consultant pilot fish from an in-house "IT guru" – he can't get on the Internet, and fish hears a lot of screaming and shouting in the background. Tell me in detail what you did, fish says. "Well, my Internet was kind of slow," guru tells him, "so I went into the network control panel and noticed all those numbers in the TCP/IP and subnet mask boxes. Since they seemed kind of high, I reduced them to some low numbers." Then what? asks fish. "Since my Internet went from slow to nothing, I figured that the problem must've been the new server that got installed recently," guru says. "So I unplugged it. I don't know how to fix it. Please don't tell my boss what I did."

Let Us Out of Here!

This IT pilot fish gets an invite to fly to the corporate main office and meet the new CIO. "We were to meet him in the newly improved server lab," fish says. "He walked in and introduced himself, then started to chat about all the new features installed." But as the boss walks around the lab and runs through his spiel, he happens to lean against a wall – and accidentally triggers the emergency stop switch. And as soon as the alarm goes off, fish's HQ colleagues spring into action – piling frantically out the server lab door. "They pushed the CIO out of the doorway as they ran by to get to their workstations," says fish. "They had 60 seconds to override the emergency stop before the halon gas would be dispersed. Fortunately for the CIO, his staff saved the day. I stopped by the CIO's office about an hour later. His assistant told me he had gone home for the day."

Because That's Easier Than Talking to Her

It's the mid-1970s, and this pilot fish is hired by a small, family-owned auto parts distributor – and she's one of the few employees who aren't related to the owner. "I punched in cards on an old IBM 129, verified the data and ran it through a card reader, which sent the data to a company where invoices were printed," says fish. "When not involved with those duties, I worked with a woman in accounts receivable. She manually matched the cards with payments, which would again be sent to the off-site computer for processing. One day, I noticed that she was tossing all cards that didn't have printing on the top. When I mentioned that those cards still contained data, she ignored me. After a while, I mentioned this to the boss, hoping that he could talk to his sister, since she was literally throwing money away. I was fired."

■ *Sharky will try not to get you fired — I'll file the identifying marks off your true tale of IT life. Send it to me at sharky@computerworld.com, and you'll score a sharp Shark shirt if I use it.*

COMPUTERWORLD.COM

TIRED OF BUNGLING BOSSES and clueless co-workers? Swim on over to Shark Bait and share your tales of woe: **sharkbait.computerworld.com**.

CHECK OUT Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky**.

■ COMPANIES IN THIS ISSUE

Page number refers to page on which story begins. Company names can also be searched at computerworld.com

365 Main Inc. 12
3Com Corp. 10
Accountemps. 37
Ace Hardware Corp. 36
Advanced Micro Devices Inc. 10, 12
Afcom Inc. 12
Amentra Inc. 16
AOL LLC 8, 20
Apple Inc. 21
Arrow Electronics Inc. 26
Australian National Security 10
Auto Warehousing Co. 14
Bain Capital LLC 10
Baldor Electric Co. 16
Benchmark IT LLC 27
BladeLogic Inc. 8
BMC Software Inc. 8
CareGroup Healthcare System 21
Centrica PLC 32
Certegy Check Services Inc. 6
Cisco Systems Inc. 6, 20
CompuCredit Corp. 22, 27
Constitutional Officers Association of New Jersey 8
Corporate Express U.S. Inc. 26
Curl Inc. 18
Dell Inc. 10
Direct Energy Marketing Ltd. 32
EYP Mission Critical Facilities Inc. 12
Facebook Inc. 21
Federal Reserve System 26
FirstHealth of the Carolinas Inc. 26
Forrester Research Inc. 22
Gabriel Consulting Group Inc. 10
Gartner Inc. 6
GlobeNet Stock Exchange Inc. 27
Google Inc. 14
Hannaford Bros. Co. 6
Harvard Clinical Research Institute 21
Harvard Medical School 21
Harvard Pilgrim Health Care Inc. 16
Harvard University 40
Hewlett-Packard Co. 10, 12, 19
HMG Strategy LLC 26
Huawei Technologies Co. 10
Hunter College 22
IBM 10, 12, 16, 39
IHL Group 26
ING Groep NV 27
Intel Corp. 10, 27
Iona Technologies PLC 16
Kaplan Inc. 16
Kaplan Test Prep & Admissions 16
Komoku Inc. 8
Lowe's Cos. 26
Macquarie University 10
Metropolitan Bank Group Inc. 16
Microsoft Corp. 8, 10, 16
MIT 18
MySQL AB 14
National Bureau of Economic Research 40
NetApp Inc. 19
New England Health Electronic Data Interchange Network 21
NFI Research 37
Novell Inc. 4, 10, 16
OpenSpan Inc. 18
Oracle Corp. 6, 10, 27
Ouellette & Associates Consulting Inc. 37
Perot Systems Corp. 16
Ponemon Institute LLC 8
Proven Scaling LLC 16
Queensland University of Technology 10
Red Hat Inc. 6, 8, 16
Reuters Group PLC 40
Robert Half Technology 37
SanDisk Corp. 8
SAP AG 10, 16
Sequoia Voting Systems Inc. 8
SmugMug Inc. 14
Stevens Institute of Technology 27
Sumisho Computer Systems Corp. 18
Sun Microsystems Inc. 10, 14, 19
SUSE Linux AG 16
Tabb Group Inc. 26
Tata Consultancy Services Ltd. 10
Technology Partners International Inc. 10
Think Passenger Inc. 16
U.S. Department of State. 8
U.S. Environmental Protection Agency 12
University of Pennsylvania 34
University of South Australia 10
Uptime Institute Inc. 12
Verbatim America LLC 8
Washington State Division of Child Support 8
Wells Real Estate Funds Inc. 27
Western Corporate Federal Credit Union 22, 27
Wharton School 34
Yahoo Inc. 16, 20

ADVERTISERS INDEX

AT&T Wireless. 15
att.com/laptopconnect
CommVault C2-1
commvault.com
Hewlett-Packard Blades 7
hp.com/go/nocompromise57
Hewlett-Packard Software 17
hp.com/go/servicemanagement
Hewlett-Packard Storage 9
hp.com/go/virtualstorage6
IBM IT Campaign 24-25
ibm.com/takebackcontrol/soa
IBM IT Campaign 28-29
ibm.com/takebackcontrol/energy
InterSystems Ensemble. 33
InterSystems.com/Ensemble25A
Mobile & Wireless World. 35
www.mwwusa.com/cwad
Novell 13
www.moreinterop.com
Oracle C4
oracle.com/goto/compression
Samsung 11
www.samsungssd.com
SAS. 3
www.sas.com/rams
Xerox Corporation C3
xerox.com/frugalcolor

This index is provided as an additional service. The publisher does not assume any liability for errors or omissions.

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement PM40063731. **CANADIAN POSTMASTER:** Please return undeliverable copy to PO Box 1632, Windsor, Ontario N9A 7C9. Computerworld (ISSN 0010-4841) is published weekly; except for a single combined issue the first two weeks of July and the last two weeks of December by Computerworld, Inc., 1 Speen Street, Box 9171, Framingham, Mass. 01701-9171.

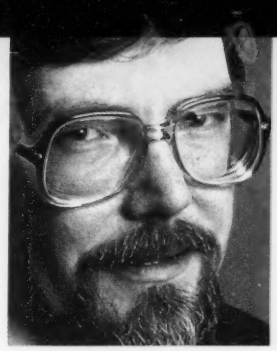
Copyright 2008 by Computerworld Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights: permission to photocopy for internal or personal use is granted by Computerworld Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus 50 cents per page, is paid directly to Copyright Clearance Center, 27 Congress St., Salem, Mass. 01970. Reprints (minimum 100 copies) and permission to reprint may be purchased from Erik Eberz, Computerworld Reprints, c/o The YGS Group, Greenfield Corporate Center, 1808 Colonial Village Lane, Lancaster, Pa., 17601, (800) 290-5460, Ext. 150. Fax: (717) 399-8900. Web site: www.reprintbuyer.com. E-mail: computerworld@theygsgroup.com. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $5 per copy; U.S. – $99.99 per year; Canada – $130 per year; Central & So. America, $250 per year; Europe – $295 per year; all other countries – $295 per year. Subscriptions call toll-free (888) 559-7327. **POSTMASTER:** Send Form 3579 (Change of Address) to Computerworld, PO Box 3500, Northbrook, Ill. 60065-3500.

BPA WORLDWIDE ABM RED TAG

■ FRANKLY SPEAKING

Frank Hayes

Recession Now



RECESSION. Where have we heard that word lately? Oh, right — just about everywhere. Not two weeks ago, there it was again: Bigwig economist Martin Feldstein told a trade show audience that the U.S. is already in a severe recession that could be the worst since World War II.

"There's no doubt that this year and next year are going to be very difficult years," Feldstein said, according to the Reuters news service.

Feldstein isn't some random Harvard economist with a penchant for understatement. He's the president of the National Bureau of Economic Research, which decides when U.S. recessions start and end. So when Feldstein says it's a recession, you can take that to the bank.

So — now we're in it. But IT departments have been through recessions before. What makes this one any different?

There's an economist's answer to that: Feldstein says the past few recessions have all been engineered by the Federal Reserve to head off inflation by slowing down the economy. The Fed raised short-term interest rates until the economy stalled, then pulled them back down to restimulate the economy and, it hoped, to produce a "soft landing" — or, at worst, a short, shallow recession.

But this time, the recession wasn't intentionally produced by the Fed. It was caused by the collapse of the housing bubble. As housing prices fell, people spent less; Feldstein figures that house prices have already dropped 10% and consumer spending has dropped by $100 billion, pushing us into recession. Before it's all over, house prices will drop another 15% to 20%, with consumer spending down a total of $250 billion to $300 billion per year.

That's money that won't trickle down into corporate IT budgets.

■ IT departments have been through recessions before. What makes this one any different?

Worse still, according to Feldstein, the financing tricks that fueled the housing bubble — subprime mortgages financed by complex asset-backed securities — have collapsed, causing credit to dry up. Since no one now knows what real estate assets are really worth, no one wants to loan money. And that's poisoning all the U.S. credit markets.

Without credit, business slows down. When that happens, IT budgets shrink. And that will continue until we hit bottom — and this time, no one is engineering a soft landing.

That's the economist's angle. But there's another reason this recession will be different.

This time, users have more power than ever before. They're more tech-savvy than ever before. They no longer depend on IT as much as they did even during the last recession, after the dot-com collapse. They can do IT themselves, or at least they think they can.

That means the risk of battles between IT and users for control of business technology is greater than ever — especially as we try to lock down, standardize and streamline IT to cut costs as budgets shrink.

Struggles for control are always expensive. This time, users have a stronger hand. If we fight, the battle will be longer, nastier and costlier — just when we can least afford it. Remember, this may be the worst recession in 60 years.

In the past, we told ourselves that the fight was worth it.

This time, there's no doubt: It isn't.

So this recession *will* be different. It has to be. Our businesses simply can't afford a costly fight with users. We *must* consult, cajole, convince, compromise, whatever it takes to work with them — and get them working with us.

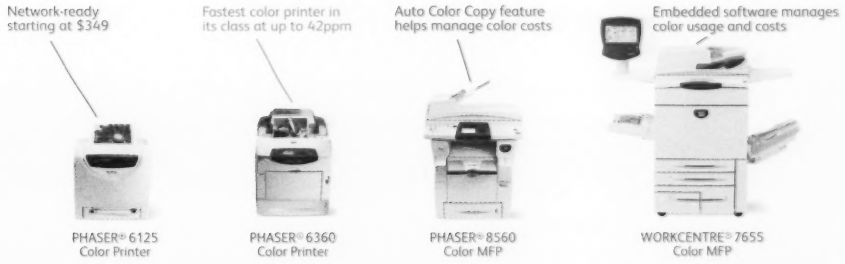
That's the way we'll survive this recession.

And the way they'll survive it, too. ■

Frank Hayes *is* Computerworld's *senior news columnist. Contact him at frank_hayes@computerworld.com.*

smart color

Making office color affordable requires new thinking.
Like prints for just pennies a page, products to fit every need,
and a guarantee to ensure total satisfaction.*
Xerox Color. It makes business sense.


Network-ready starting at $349
Fastest color printer in its class at up to 42ppm
Auto Color Copy feature helps manage color costs
Embedded software manages color usage and costs
PHASER® 6125 Color Printer
PHASER® 6360 Color Printer
PHASER® 8560 Color MFP
WORKCENTRE® 7655 Color MFP

xerox.com/frugalcolor 1-800-ASK-XEROX

xerox

*The Xerox Total Satisfaction Guarantee applies to equipment under warranty or a full-service Xerox maintenance agreement and is subject to certain conditions.

© 2008 XEROX CORPORATION. All rights reserved. XEROX® sphere symbol, Phaser®, WorkCentre® and Xerox Color. It makes business sense are trademarks of XEROX CORPORATION in the United States and/or other countries.

Throw Away*

Half Your Disk Drives

Newest Oracle Database

Half the disk space

Half the electricity

Half the cost

And it runs faster

Advanced data compression makes the planet a little greener

oracle.com/goto/compression
or call 1.800.ORACLE.1

*We encourage you to reuse or recycle. Learn more at: www.eiae.org

Copyright © 2008, Oracle. All rights reserved. Oracle is a registered trademark of Oracle Corporation and/or its affiliates.
Other names may be trademarks of their respective owners.